Population Division
Department of Economic and Social Affairs
United Nations Secretariat

Replacement Migration



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Replacement Migration:
Is it A Solution to Declining and Ageing Populations?



NOTE

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The designations "developed" and "developing" countries and "more developed" and "less developed" regions are intended for statistical convenience and do not necessarily express a judgement about the stage reached by a particular country or area in the development process.

The term "country" as used in the text of this publication also refers, as appropriate, to territories or areas.

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PREFACE

The Population Division of the Department of Economic and Social Affairs at the United Nations Secretariat is responsible for providing the international community with up-to-date and scientifically objective information on population and development. The Population Division provides guidance to the United Nations General Assembly, Economic and Social Council and the Commission on Population and Development on population and development issues and undertakes regular studies on population levels and trends, population estimates and projections, population policies and population and development interrelationships.

In particular, the Population Division is concerned with the following substantive areas: patterns of mortality, fertility and international and internal migration, including levels and trends, their causes and consequences, and socio-economic, geographic and gender differentials; spatial distribution of population between urban and rural areas and among cities; estimates and projections of population size, age and sex structure, spatial distribution and demographic indicators for all countries of the world; population and development policies at the national and international levels; and the relationship between socio-economic development and population change.

The work of the Population Division is published in a variety of formats, including electronically, in order to meet the needs of diverse audiences. These publications and materials are used by Governments, national and international organisations, research institutions and individuals engaged in social and economic planning, research and training, and by the general public.

Replacement Migration: Is it A Solution to Declining and Ageing Populations? may also be accessed on the Population Division world wide web site at *www.un.org/esa/population/unpop.htm*. For further information, please contact the office of Mr. Joseph Chamie, Director, Population Division, United Nations, New York 10017, USA.

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Symbols of United Nations documents are composed of capital letters combined with figures.

Various symbols have been used in the tables throughout this report, as follows:

Two dots (..) indicate that data are not available or are not separately reported.
An em dash (—) indicates that the population is less than 500 persons.
A hyphen (-) indicates that the item is not applicable.
A minus sign (-) before a figure indicates a decrease.
A full stop (.) is used to indicate decimals.
Years given refer to 1 July.
Use of a hyphen (-) between years, for example, 1995-2000, signifies the full period involved, from 1 July of the beginning year to 1 July of the end year.

The following abbreviations are used in the present report:

EC	European Community
EU	European Union
PSR	Potential support ratio
TFR	Total fertility rate

Details and percentages in tables do not necessarily add to totals because of rounding.

Countries and areas are grouped geographically into six major areas: Africa; Asia; Europe; Latin America and the Caribbean; Northern America; and Oceania. Those major areas are further divided geographically into 21 regions. In addition, the regions are classified as belonging, for statistical convenience, to either of two general groups: more developed and less developed regions. The less developed regions include all regions of Africa, Asia (excluding Japan), Latin America and the Caribbean, Melanesia, Micronesia and Polynesia. The more developed regions comprise Northern America, Japan, Europe and Australia/New Zealand.

The European Union comprises 15 countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden and United Kingdom.

Europe comprises 47 countries and areas: Albania, Andorra, Austria, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Channel Islands, Croatia, Czech Republic, Denmark, Estonia, Faeroe Islands, Finland, France, Germany, Gibraltar, Greece, Holy See, Hungary, Iceland, Ireland, Isle of Man, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Monaco, Netherlands, Norway, Poland, Portugal, Republic of Moldova, Romania, Russian Federation, San Marino, Slovakia, Slovenia, Spain, Sweden, Switzerland, The former Yugoslav Republic of Macedonia, Ukraine, United Kingdom, and Yugoslavia.



شعبة الأمم المتحدة للسكان

الهجرة الإحلالية: هل هي حلّ لتناقص عدد السكان وشيخوختهم؟

موجز تنفيذي

تدرس شعبة الأمم المتحدة للسكان اتجاهات الخصوبة ومعدل الوفيات والهجرة في كل بلدان العالم ليكون ذلك أساساً لإصدار التقديرات والإسقاطات الرسمية للأمم المتحدة في مجال السكان. ومن بين الاتجاهات الديموغرافية التي تكشف عنها هذه الأرقام، هناك اتجاهان ملحوظان بشكل خاص: تناقص عدد السكان وشيخوخة السكان.

إن هذه الدراسة، بتركيزها على هذين الاتجاهين الحاسمين اللافتين للنظر، تتناول مسألة الهجرة الإحلالية وهل تعتبر حلاً لتناقص عدد السكان وشيخوختهم أم لا. وتشير الهجرة الإحلالية إلى الهجرة الدولية التي لا غنى عنها لتعويض النقص في عدد السكان، وتناقص عدد السكان الذين هم في سنّ العمل، وكذلك لتعويض شيخوخة السكان بوجه عام.

وتقدر الدراسة حجم الهجرة الإحلالية، وتبحث في الآثار المحتملة للهجرة الإحلالية على عدد السكان وتركيبتهم في نوع من البلدان التي تشترك في نمط للخصوبة يقل عن مستوى الإحلال. وتتناول الدراسة ثمانية بلدان هي: الاتحاد الروسي، ألمانيا، إيطاليا، جمهورية كوريا، فرنسا، المملكة المتحدة، الولايات المتحدة، اليابان. وتشمل الدراسة أيضاً منطقتين هما: الاتحاد الأوروبي وأوروبا. والفترة المشمولة هي نصف قرن تقريباً، أي من عام 1995 إلى عام 2050.

ووفقاً لإسقاطات الأمم المتحدة السكانية (المتغيَّر المتوسط)، يُتوقع أن ينخفض عدد سكان اليابان وجميع بلدان أوروبا في خلال الأعوام الخمسين القادمة. فمن المتوقع مثلاً أن ينخفض عدد سكان إيطاليا، البالغ الآن 57 مليون نسمة، إلى 41 مليوناً بحلول عام 2050. ومن المتوقع أن ينخفض عدد سكان الاتحاد الروسي من 147 مليوناً إلى 121 مليوناً فيما بين عامي 2000 و 2050. وبالمثل فإن من المتوقع لسكان اليابان، البالغ عددهم الآن 127 مليون نسمة، أن ينخفض عددهم إلى 105 ملايين بحلول عام 2050.

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وعلاوة على انخفاض عدد السكان، فإن اليابان وبلدان أوروبا تشهد عملية شيخوخة متسارعة نسبياً. ففي اليابان، على سبيل المثال، من المتوقع في نصف القرن القادم أن يزداد متوسط عمر السكان حوالي ثمانية أعوام، أي من 41 عاماً إلى 49 عاماً. ومن المتوقع أن تزداد النسبة الراهنة للسكان اليابانيين البالغين من العمر 65 عاماً أو أكثر، وهي 17 في المائة، إلى 32 في المائة. وفي إيطاليا بالمثل يزداد متوسط عمر السكان من 41 عاماً إلى 53 عاماً، كما تزداد نسبة السكان البالغين من العمر 65 عاماً أو أكثر من 18 في المائة إلى 35 في المائة.

واستناداً إلى هذه التقديرات والإسقاطات، تضع هذه الدراسة خمسة سيناريوهات مختلفة فيما يتصل بتدفقات الهجرة الدولية المطلوبة لتحقيق أهداف أو نتائج معينة في مجال السكان في البلدان الثمانية والمنطقتين المشار إليها أعلاه. والسيناريوهات الخمسة هي:

- لوألا ويرانيسلا: حيقنت :ناكسلل ةيملاعلا قافآلا" نم ةذوخأملا تاطاقسإلل طسوتملا ريغتملا
ةدحتملا مملأا نع ةرداصلا "1998 ماع.

- يناثلا ويرانيسلا: مادعنا ضارتفا ساسأ ىلع لدعملا ،"1998 ماع حيقنت" ـل طسوتملا ريغتملا
1995 ماع دعب ةرجهلا.

- ثلاثلا ويرانيسلا: يف ناكسلا ددع ىلع ءاقبإلل ةبولطملا ةرجهلا رّدقيو بسحي ويرانيسلا اذه
1995 ماع دعب ةرجهلا بايغ يف هيلإ لصي نأ نكمي ىوتسم ىلعأ يف مهعومجم.

- عبارلا ويرانيسلا: نيذلا ناكسلا ددع ىلع ءاقبإلل ةبولطملا ةرجهلا رّدقيو بسحي ويرانيسلا اذه
هم يف ّنس لمعلا (15 ىلإ 64 ًاماع) يف ىلعأ ىوتسم نكمي نأ لصي هيلإ
يف بايغ ةرجهلا دعب ماع 1995.

- سماخلا ويرانيسلا: اذه ويرانيسلا بسحي ردقيو ّرجهلا ةبولطملا ءاقبإلل ىلع ةبسن مدعلا
ةلمتحملا، يأ ةبسن ناكسلا نيذلا مه يف نس لمعلا (15 ىلإ 64 ًاماع) ىلإ
نيّنسملا نم ناكسلا (65 ًاماع وأ رثكأ)، يف ىلعأ ىوتسم نكمي نأ لصت هيلإ
يف بايغ ةرجهلا دعب ماع 1995.

دريو يف لودجلا 1 عومجم طسوتمو دادعألا ةيونسلا نم نيرجاهملا ةرتفلل 2000-2050
ةبسنلاب ىلإ لك ويرانيس .ويرانيسلا يف دريو ويرانيسلا لوألا دادعألا ةردقملا نيرجاهملل نادلبلل ةينامثلا
نيتقطنملاو يف ريغتملا طسوتملا تاطاقسإلل مملأا ةدحتملا. فمثلاً ردقي عومجم ددع نيرجاهملا
نيبولطملا تايلاولل ةدحتملا ةرتفلل نيسمخلا ًاماع بـ 38 ًانويلم، طسوتمو ددعلا يونسلا وه 760
ًافلأ. ويردقي ويرانيسلا يناثلا ةرجه ةمودعم ةرتفلل .اهلمكأب ويرد يف صن اذه ريرقتلا ام بترتي
ىلع كلذ ةبسنلاب ىلإ ةبيكرت ناكسلا ماعلأاو.ر

الجدول 1 - صافي عدد المهاجرين حسب البلد أو المنطقة والسيناريو، 2000-2050 (بالآلاف)

لودجلا 1 - يفاص ددع نيرجاهملا بسح دلبلا وأ ةقطنملا ويرانيسلاو، 2000-2050
(فالآلاب)

ةقطنملا وأ دلبلا	ويرانيسلا	لوألا ريغتملا طسوتملا	يناثلا ريغتملا طسوتملا عم مادعنا ةرجهلا	ثلاثلا ددعلا يلكلا تباثلا ناكسلل	عبارلا ةئفلا ةيرمعلا ةتباثلا 15-64	سماخلا ةبسنلا ةتباثلا 15-64/65 ًاماع وأ رثكأ
يلكلا ددعلا - فلأ						
يسورلا داحتالا		448 5	رفص	896 24	756 35	379 253
ايناملأ		200 10	رفص	187 17	330 24	508 181
ايلاطيإ		310	رفص	569 12	596 18	381 113
ايروك ةيروهمج		-350	رفص	509 1	426 6	147 128 5
اسنرف		325	رفص	473 1	459 5	584 89
ةدحتملا ةكلمملا		000 1	رفص	634 2	247 6	722 59
ةدحتملا تايلاولا		000 38	رفص	384 6	967 17	572 592
نابايلا		رفص	رفص	141 17	332 32	543 523
يبوروألا داحتالا		489 13	رفص	456 47	375 79	999 673
ابوروأ		779 18	رفص	869 95	346 161	932 356 1

البلد أو المنطقة	السيناريو	الأول	الثاني	الثالث	الرابع	الخامس
		المتغير المتوسط	المتغير المتوسط مع انعدام الهجرة	العدد الكلي الثابت للسكان	الفئة العمرية الثابتة 15-64	النسبة الثابتة 15-64/65 عاماً أو أكثر

ألف - العدد الكلي

باء - متوسط العدد السنوي

الاتحاد الروسي	109	صفر	498	715	5 068
ألمانيا	204	صفر	344	487	3 630
إيطاليا	6	صفر	251	372	2 268
جمهورية كوريا	70	صفر	30	129	102 563
فرنسا	-7	صفر	29	109	1 792
المملكة المتحدة	20	صفر	53	125	1 194
الولايات المتحدة	760	صفر	128	359	11 851
اليابان	صفر	صفر	343	647	10 471
الاتحاد الأوروبي	270	صفر	949	1 588	13 480
أوروبا	376	صفر	1 917	3 227	27 139

وباستثناء الولايات المتحدة، فإن أعداد المهاجرين المطلوبة للإبقاء على عدد السكان في مجموعهم (السيناريو الثالث) أعلى بكثير من الأعداد المقدرة في المتغير المتوسط في إسقاطات الأمم المتحدة (السيناريو الأول). ففي إيطاليا، على سبيل المثال، يصل مجموع عدد المهاجرين إلى 12.6 مليوناً (أو 251 ألفاً في السنة) في السيناريو الثالث، في مقابل 0.3 من المليون (أو 6 آلاف في السنة) في السيناريو الأول. وبالنسبة إلى الاتحاد الأوروبي، تصل الأعداد إلى 47 مليوناً في مقابل 13 مليوناً (أو 949 ألفاً في السنة في مقابل 270 ألفاً في السنة).

وفي السيناريو الرابع، أي من أجل المحافظة على ثبات عدد السكان الذين هم في سنّ العمل (من 15 إلى 64 عاماً)، فإن أعداد المهاجرين تزيد أكثر من ذلك على أعدادهم في السيناريو الثالث. ففي ألمانيا، على سبيل المثال، يبلغ مجموع عدد المهاجرين 24 مليوناً (أو 487 ألفاً في السنة) في السيناريو الرابع، في مقابل 17 مليوناً (أو 344 ألفاً في السنة) في السيناريو الثالث.

ويعطي الشكل 1 مقارنة منمّطة بعض تدفقات اللاجئين معبرا عنها لكل مليون نسمة في عام 2000. ويتضح من هذه المقارنة أنه فيما تتصل بحجم البلد، فإن عدد المهاجرين المطلوبين فيما بين عامي 2000 و 2050 للإبقاء على عدد السكان الذين هم في سنّ العمل (السيناريو الرابع) أعلى ما يكون بالنسبة إلى إيطاليا، إذ يصل إلى 6 500 مهاجر سنوياً لكل مليون نسمة، وتليها ألمانيا حيث يصل العدد إلى 6 000 مهاجر سنوياً لكل مليون نسمة. ومن بين البلدان والمناطق المدروسة في هذا التقرير، لن تحتاج الولايات المتحدة إلا إلى العدد الأقل من المهاجرين، وهو زهاء 300 لكل 1 مليون نسمة، للحيلولة دون تناقص عدد سكانها الذين هم في سنّ العمل.

أما الأعداد في السيناريو الخامس، الذي يحافظ على ثبات نسبة الدعم المحتملة، فهي مرتفعة بشكل غير عادي. ففي اليابان، على سبيل المثال، يصل مجموع عدد المهاجرين في

السيناريو الخامس إلى 524 مليوناً (أو 10.5 ملايين في السنة)، وبالنسبة إلى الاتحاد الأوروبي، يبلغ مجموع عدد المهاجرين في هذا السيناريو 674 مليوناً (أو 13 مليوناً في السنة).

الشكل 1 - صافي متوسط العدد السنوي من المهاجرين فيما بين عامي 2000 و 2050 المطلوب للإبقاء على عدد السكان الذين هم في سن العمل، لكل مليون نسمة في عام 2000

وتتضمن النتائج الأساسية لهذه الدراسة ما يلي:

- في النصف الأول من القرن الحادي والعشرين، يتوقع أن يقل عدد السكان في معظم البلدان المتقدمة النمو وأن يُسنّوا، وذلك نتيجة لانخفاض الخصوبة عن مستوى الإحلال وطول العمر المطرد.

- مع انعدام الهجرة سيكون انخفاض عدد السكان أعلى بكثير من الأعداد المسقطة وستكون شيخوخة السكان أسرع.

- مع أن الخصوبة يمكن أن تزداد في العقود القادمة، فإن قلة من الناس ترى أن الخصوبة في معظم البلدان المتقدمة النمو ستستعيد عافيتها بدرجة تكفي لبلوغ مستوى الإحلال في المستقبل المنظور، مما يجعل انخفاض عدد السكان محتوماً مع انعدام الهجرة الإحلالية.

- إن انخفاض عدد السكان وشيخوخة السكان المقدرين ستكون لهما عواقب بالغة وواسعة النطاق ستحمل الحكومات على إعادة تقييم العديد من السياسات والبرامج الاقتصادية والاجتماعية والسياسية المستقرة، بما فيها ما يتصل بالهجرة الدولية.
- بالنسبة إلى المملكة المتحدة والولايات المتحدة والاتحاد الأوروبي، تقل أعداد المهاجرين اللازمين لتعويض نقص عدد السكان عن التجربة القريبة أو تعادلها. ومع أن هذا ينطبق أيضاً على الاتحاد الروسي وألمانيا، فإن تدفقات المهاجرين في التسعينات كانت كبيرة نسبياً بسبب التفكك وإعادة التوحيد، على التوالي.

- بالنسبة إلى إيطاليا وجمهورية كوريا واليابان وأوروبا، ستكون هناك حاجة إلى مستوى هجرة أعلى بكثير من تجربة الماضي القريب لتعويض تناقص عدد السكان.

- إن أعداد المهاجرين اللازمين لتعويض النقص في عدد السكان الذين هم في سنّ العمل هي أعلى بكثير من الأعداد المطلوبة لتعويض النقص في عدد السكان في مجموعهم. وكون هذه الأعداد الكبيرة من المهاجرين في حدود الخيارات المتاحة للحكومات يتوقف إلى حد كبير على الظروف الاجتماعية والاقتصادية والسياسية للبلد المعني أو المنطقة المعنية.

- إذا بقيت سنّ التقاعد أساساً كما هي اليوم، فإن زيادة عدد السكان الذين هم في سنّ العمل عن طريق الهجرة الدولية ستكون، في الأجل القصير إلى الأجل المتوسط، الخيار الوحيد للحد من انخفاض نسبة الدعم المحتملة.

- إن مستويات الهجرة اللازمة لتعويض شيخوخة السكان (أي الحفاظ على نسب الدعم المحتملة) عالية إلى أقصى حد، وتؤدي في جميع الحالات إلى معدل هجرة أكثر بكثير مما حدث في الماضي.

- ةيلالحلإا ةرجهلا قيرط نع ةنهارلا تايوتسملا يف ةلمتحملا معدلا بسن ىلع ءاقبلإا نإ .اهيلإ ةجاح كانه نوكتس يتلا نيرجاهملا دادعأ ةماخض لب ،لانملا ديعب ودبي اهدحو

- نع ةنهارلا تايوتسملا يف ةلمتحملا معدلا بسن ىلع ءاقبلإا تلااحلا مظعم يف نكمي .ابيرقت ةنس 75 ىلإ لمعلا نّس يف مه نيذلا ناكسلا نّسل ىصقلأا دحلا ةدايز قيرط

- لمعلا بلطتتس مهتخويشو ناكسلا ددع صقانت اهريثي يتلا ةديدجلا تايدحتلا نإ ةيداصتقلاا جماربلاو تاسايسلا نم ديدعلا مييقت ةداعإ ىلع لماشو ماتو يعوضوم لكشب .لجلأا ليوط روظنم جاردإ هذه مييقتلا ةداعإ يضتقتسو .ةرقتسملا ةيسايسلاو ةيعامتجلااو ةمئلاملا نسلا (أ) :هذه مييقتلا ةداعإ يف اهتجلاعم نم دب لا يتلا ةمساحلا لئاسملا نمو (ج) ؛نسلا رابكل ةيحصلا ةياعرلاو دعاقتلا ايازم ةعيبطو عاونأو تايوتسم (ب) ؛دعاقتلل ايازم معد يف لمعلا باحصأو لامعلا تامهاسمل ةردقملا غلابملا (د) ؛ةلماعلا ةوقلا ةكراشم تاسايسلا (ـه) ؛ناكسلا نم نسلا رابك نم ةديازتملا دادعلأل ةيحصلا ةياعرلاو دعاقتلا نم ةريبك دادعأ جامدإو ،ةيلاحلإا ةرجهلا اميس لاو ،ةيلودلا ةرجهلاب ةلصتملا جماربلاو .مهلسنو ًاثيدح نيرجاهملا



联合国人口司

代替移徙：人口减少和人口老龄化的解决办法？

内容摘要

联合国人口司监测世界各国的生育率、死亡率和移徙的趋势，作为联合国提供正式人口估计数和预测的依据．在这些数字显示的人口趋势中，人口减少和人口老龄化这两个趋势特点明显．

本研究报告着重于这两个明显的重要趋势，探讨了代替移徙是否人口减少和人口老龄化的解决办法的问题．代替移徙系指为弥补人口数字减少，工作年龄人口减少，以及人口的全面老龄化所需的国际移徙．

本研究报告用计算机计算代替移徙的数字，并调查研究代替移徙对于一些国家的人口数目和年龄结构可能产生的影响，这些国家的生育模式都共同低于更替生育水平．报告审查的八个国家是法国、德国、意大利、日本、大韩民国、俄罗斯联邦、联合王国和美国．也审查了欧洲和欧洲联盟这两个区域．研究涉及时间大约为半个世纪，即由 1995 年至 2050 年．

根据联合国人口预测（中期变量），预计在未来的 50 年里，日本及实际上欧洲所有国家的人口数目将减少．例如，意大利现有人口 5 700 万，预计到 2050 年时，将减至 4 100 万．在 2000 年至 2050 年期间，预计俄罗斯联邦的人口将由 1.47 亿减至 1.21 亿．同样，预计到 2050 年时，日本人口将由目前的 1.27 亿减至 1.05 亿．

除了人口数目减少外，日本和欧洲各国也在经历相对迅速的人口老龄化过程．例如日本在未来的半个世纪内，人口的中间年龄预计将增加大约八年，即由 41 岁增至 49 岁．预计日本 65 岁或 65 岁以上人口的比例，将由目前的 17 % 增至 32 %．同样，意大利人口的中间年龄将由 41 岁增至 53 岁，65 岁和 65 岁以上人口的比例将由 18 % 增至 35 %．

本研究报告根据这些估计数和预测，审议了为实现上述八个国家和两个区域的特定人口目标或结果所需的国际移徙流动方面的五个不同方案．这五个方案是：

方案一．联合国《世界人口前景：1998 年订正本》的预测中期变量．

方案二．经假设 1995 年后零移徙修订的《1998 年订正本》的中期变量．

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方案三. 该方案用计算机计算和设想为维持在 1995 年后没有移徙的情况下总人口将达到的最高水平所需的移徙.

方案四. 该方案用计算机计算并设想为维持在 1995 年后没有移徙的情况下工作年龄（15 至 64 岁）人口数目将达到的最高水平所需的移徙.

方案五. 该方案用计算机计算并设想为维持在 1995 年后没有移徙的情况下潜在赡养比率，即工作年龄（15 至 64 岁）人口与老年（65 岁及 65 岁以上）人口的比率将达到的最高水平所需的移徙.

表一提供了在 2000 年至 2050 年期间，每个方案所需的移徙者总数和年平均数. 方案一显示按联合国预测的中期变量设想的八个国家和两个区域所需的移徙者数目. 例如，美国在五十年期间所需的移徙者总数为 3 800 万；年平均数为 76 万. 方案二设想整个五十年内零移徙；本报告文本提供了推定人口数字和年龄结构.

表一. 2000 年至 2050 年按国家或区域以及方案分列的移徙者净数

（千计）

方案	一	二	三	四	五
国家或区域	中期变量	零移徙的中期变量	不变总人口	不变年龄组 15 至 64 岁	不变比率 15 至 64 岁/65 岁与 65 岁以上
		A. 总数			
法国	325	0	1 473	5 459	89 584
德国	10 200	0	17 184	24 330	181 508
意大利	310	0	12 569	18 596	113 381
日本	0	0	17 141	32 332	523 543
大韩民国	-350	0	1 509	6 426	5 128 147
俄罗斯联邦	5 448	0	24 896	35 756	253 379
联合王国	1 000	0	2 634	6 247	59 722
美国	38 000	0	6 384	17 967	592 572
欧洲	18 779	0	95 869	161 346	1 356 932
欧洲联盟	13 489	0	47 456	79 375	673 999
		B. 年平均数			
法国	7	0	29	109	1 792
德国	204	0	344	487	3 630
意大利	6	0	251	372	2 268

日本	0	0	343	647	10 471
大韩民国	-7	0	30	129	102 563
俄罗斯联邦	109	0	498	715	5 068
联合王国	20	0	53	125	1 194
美国	760	0	128	359	11 851
欧洲	376	0	1 917	3 227	27 139
欧洲联盟	270	0	949	1 588	13 480

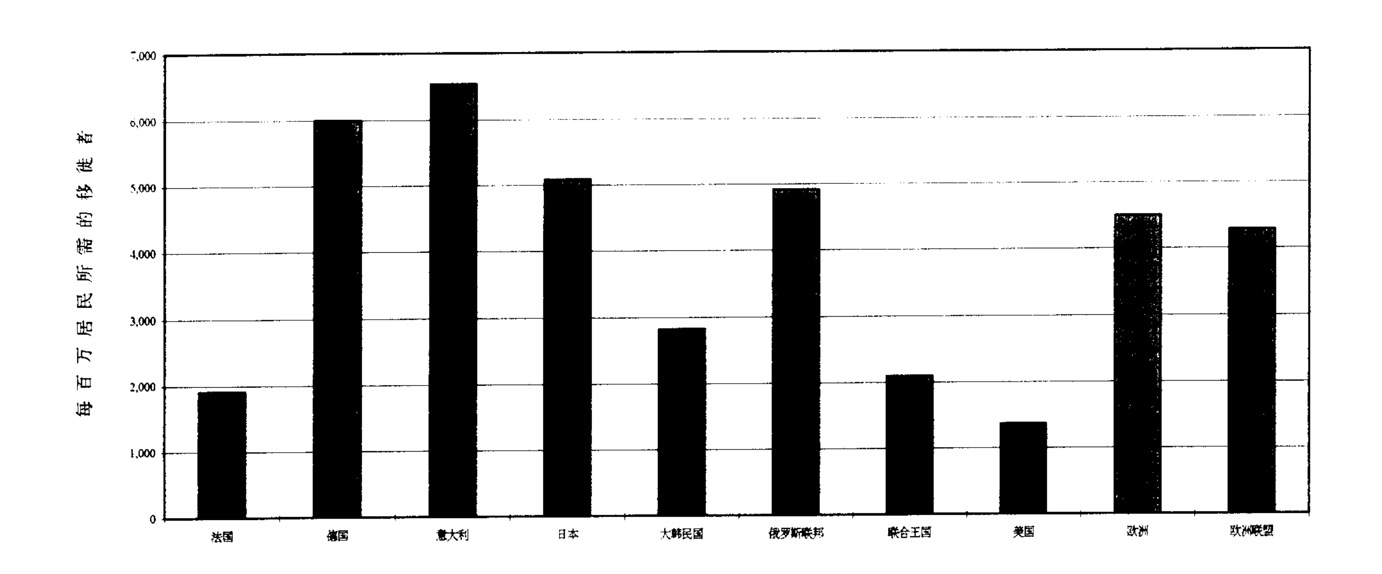
除美国外，为维持总人口数（方案三）所需的移徙者数目，要比联合国预测的中期变量（方案一）设想的移徙者数目大得多。譬如，意大利在方案三中的移徙者总数为 1 260 万（或每年 25.1 万），而在方案一中的移徙者总数为 30 万（或每年 6 000）。就欧洲联盟而言，移徙者总数则分别为 4 700 万对 1 300 万（或每年 94.9 万对每年 27 万）。

在使工作年龄（15 至 64 岁）人口的数目保持不变的方案四中，所需的移徙者数目甚至比方案三设想的数字更大。譬如，在方案四中，德国需要的移徙者总数是 2 400 万（或每年 48.7 万），而在方案三中，该国所需的移徙者总数为 1 700 万（或每年 34.4 万）。

图一按 2000 年每百万居民计所示移徙流动提供了标准化比较。比较显示，在 2000 年至 2050 年期间，为维持工作年龄人口数目（方案四）所需的与国家人口数目有关的移徙者数字，意大利的数字最高，每百万居民每年需要 6 500 名移徙者，其后是德国，每百万居民需要 6 000 名移徙者。在本报告研究的国家与区域中，美国需要的移徙者数目最少，以防止其工作年龄人口的减少，每百万居民大约需要 1 300 名移徙者。

使潜在赡养比率保持不变的方案五中的数字巨大。例如，日本在方案五中所需的移徙者总数是 5.24 亿（或每年 1 050 万）。就欧洲联盟而言，它在此方案中所需的移徙者总数是 6.74 亿（或每年 1 300 万）。

图一. 2000 年至 2050 年为维持 2000 年每百万居民
工作年龄人口数目所需的移徙者年平均净数字



本研究报告的主要调查结论包括:

- 由于生育率低于更替水平，以及寿命延长，预计大多数发达国家的人口在 21 世纪上半叶将更少，且更老龄化.
- 若没有移徙，人口数目的减少将比预测的减少更多，人口也将更迅速地老龄化.
- 尽管在未来的数十年里，生育率可能回升，但几乎没有人相信在可预见的未来，大多数发达国家的生育率将充分恢复到更替水平，因此，没有代替移徙将不可避免地使人口减少.
- 预计的人口减少和人口老龄化将产生深远的影响，迫使各国政府重新评估多项确定的经济、社会和政治政策与方案，其中包括与国际移徙有关的政策与方案.
- 就法国、联合王国、美国和欧洲联盟而言，为弥补人口减少所需的移徙者数目低于或与最近的移徙者数目相似. 德国和俄罗斯联邦的情况亦是如此，但是，由于两国分别实现统一和解体， 1990 年代移徙流动量相对较大.
- 就意大利、日本、大韩民国和欧洲而言，为弥补人口减少，将需要比最近外来移民更多的外来移民.
- 为弥补工作年龄人口减少所需的移徙者数目，比为弥补总人口减少所需的移徙者数目

要大得多．这些较大的移徙者数目是否在各国政府正在考虑的选择方法的范围之内，在很大程度上取决于特定国家或区域的社会、经济和政治情况．

- 如果退休年龄基本保持今天的退休年龄不变，通过国际移徙增加工作年龄人口数目，是在中、短期内缓解潜在赡养比率降低的惟一选择办法．

- 为弥补人口老龄化（即维持潜在赡养比率）所需的移徙者数目是极大的，在各种情况下，均需要比过去移徙数目大得多的移徙者．

- 仅通过代替移徙来保持目前的潜在赡养比率似乎不可行，原因是将需要极大数目的移徙者．

- 在大多数情况下，可以将工作年龄人口的上限提高到大约 75 岁，来维持目前水平的潜在赡养比率．

- 人口减少和人口老龄化带来的新挑战，要求重新客观、全面、彻底地评估许多确定的经济、社会和政治政策与方案．这样的重新评估需要包含长期观点．重新评估过程中要解决的关键问题包括: (a) 退休的适当年龄; (b) 退休的级别、类型和性质，以及老年人的保健福利; (c) 劳动力参加率; (d) 工作人员与雇主为支助日益增加的老年人口的退休和保健福利分摊的款额; 以及(e)与国际移徙，特别是与代替移徙以及大批新近移徙者及其后裔的融合有关的政策与方案．

REPLACEMENT MIGRATION: IS IT A SOLUTION TO DECLINING AND AGEING POPULATION?

United Nations Population Division

EXECUTIVE SUMMARY

The United Nations Population Division monitors fertility, mortality and migration trends for all countries of the world, as a basis for producing the official United Nations population estimates and projections. Among the demographic trends revealed by those figures, two are particularly salient: population decline and population ageing.

Focusing on these two striking and critical trends, the present study addresses the question of whether replacement migration is a solution to declining and ageing populations. Replacement migration refers to the international migration that would be needed to offset declines in the size of population, the declines in the population of working age, as well as to offset the overall ageing of a population.

The study computes the size of replacement migration and investigates the possible effects of replacement migration on the population size and age structure for a range of countries that have in common a fertility pattern below the replacement level. Eight countries are examined: France, Germany, Italy, Japan, Republic of Korea, Russian Federation, United Kingdom and United States. Two regions are also included: Europe and the European Union. The time period covered is roughly half a century, i.e., from 1995 to 2050.

According to the United Nations population projections (medium variant), Japan and virtually all the countries of Europe are expected to decrease in population size over the next 50 years. For example, the population of Italy, currently 57 million, is projected to decline to 41 million by 2050. The Russian Federation is expected to decrease from 147 million to 121 million between 2000 and 2050. Similarly, the population of Japan, currently 127 million, is projected to decline to 105 million by 2050.

In addition to the decrease in population size, Japan and the countries of Europe are undergoing a relatively rapid ageing process. In Japan, for example, over the next half century the median age of the population is expected to increase by some eight years, i.e., from 41 to 49 years. And the proportion of the Japanese population 65 years or older is expected to increase from its current 17 per cent to 32 per cent. Similarly in Italy, the median age of the population increases from 41 years to 53 years and the proportion of the population 65 years or older goes from 18 per cent to 35 per cent.

Building upon these estimates and projections, the present study considers five different scenarios with regard to the international migration streams needed to achieve specific population objectives or outcomes for the eight countries and two regions mentioned above. The five scenarios are:

Scenario I. The medium variant of the projections from the United Nations *World Population Prospects: 1998 Revision*.

Scenario II. The medium variant of the *1998 Revision*, amended by assuming zero migration after 1995.

Scenario III. This scenario computes and assumes the migration required to maintain the size of the total population at the highest level it would reach in the absence of migration after 1995.

Scenario IV. This scenario computes and assumes the migration required to maintain the size of the working-age population (15 to 64 years) at the highest level it would reach in the absence of migration after 1995.

Scenario V. This scenario computes and assumes the migration required to maintain the potential support ratio (PSR), i.e., the ratio of the working-age population (15 to 64 years) to the old-age population (65 years or older), at the highest level it would reach in the absence of migration after 1995.

The total and average annual numbers of migrants for the period 2000-2050 for each scenario are presented in table 1. Scenario I shows the numbers of migrants assumed for the eight countries and two regions in the medium variant of the United Nations projections. For example, the total number of migrants for the United States for the fifty-year period is 38 million; and the average annual number is 760 thousand. Scenario II assumes zero migration for the entire period; the resulting populations and age structures are given in the text of this report.

TABLE 1. NET NUMBER OF MIGRANTS BY COUNTRY OR REGION AND SCENARIO, 2000-2050
(*Thousands*)

Scenario	*I*	*II*	*III*	*IV*	*V*
Country or region	*Medium variant*	*Medium variant with zero migration*	*Constant total population*	*Constant age group 15-64*	*Constant ratio 15-64/65 years or older*
		A. Total number			
France	325	0	1 473	5 459	89 584
Germany	10 200	0	17 187	24 330	181 508
Italy	310	0	12 569	18 596	113 381
Japan	0	0	17 141	32 332	523 543
Republic of Korea	-350	0	1 509	6 426	5 128 147
Russian Federation	5 448	0	24 896	35 756	253 379
United Kingdom	1 000	0	2 634	6 247	59 722
United States	38 000	0	6 384	17 967	592 572
Europe	18 779	0	95 869	161 346	1 356 932
European Union	13 489	0	47 456	79 375	673 999
		B. Average annual number			
France	7	0	29	109	1 792
Germany	204	0	344	487	3 630
Italy	6	0	251	372	2 268
Japan	0	0	343	647	10 471
Republic of Korea	-7	0	30	129	102 563
Russian Federation	109	0	498	715	5 068
United Kingdom	20	0	53	125	1 194
United States	760	0	128	359	11 851
Europe	376	0	1 917	3 227	27 139
European Union	270	0	949	1 588	13 480

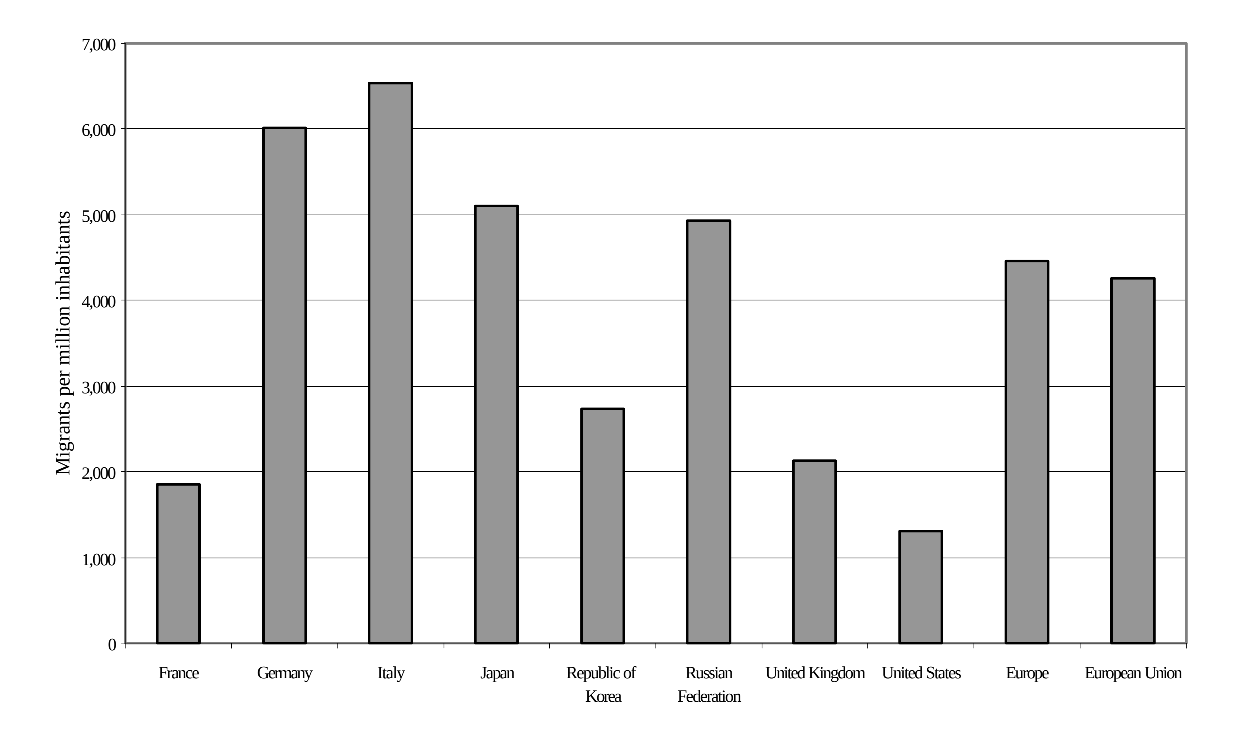
Except for the United States, the numbers of migrants needed to maintain the size of the total population (scenario III) are considerably larger than those assumed in the medium variant of the United Nations projections (scenario I). In Italy, for example, the total number of migrants is 12.6 million (or 251 thousand per year) in scenario III versus 0.3 million (or 6 thousand per year) in scenario I. For the European Union, the respective numbers are 47 million versus 13 million (or 949 thousand per year versus 270 thousand per year).

In scenario IV, that is in order to keep constant the size of the working-age population (15 to 64 years), the numbers of migrants are even larger than those in scenario III. In Germany, for instance, the total number of migrants is 24 million (or 487 thousand per year) in scenario IV versus 17 million (or 344 thousand per year) in scenario III.

Figure 1 provides a standardised comparison by presenting the migration flows expressed in per million inhabitants in 2000. This comparison shows that relative to country size the number of migrants between 2000-2050 needed to maintain the size of the working-age population (scenario IV) is the highest for Italy, with 6,500 annual immigrants per million inhabitants, followed by Germany, with 6,000 annual immigrants per million inhabitants. Among the countries and regions studied in this report, the United States would require the smallest number of immigrants, approximately 1,300 per million inhabitants to prevent the decline of its working-age population.

The numbers in scenario V, which keeps the potential support ratio constant, are extraordinarily large. In Japan, for example, the total number of migrants in scenario V is 524 million (or 10.5 million per year). For the European Union, the total number of migrants in this scenario is 674 million (or 13 million per year).

Figure 1. Average annual net number of migrants between 2000-2050 to maintain size of working-age population per million inhabitants in 2000



Major findings of this study include:

- During the first half of the 21st century, the populations of most developed countries are projected to become smaller and older as a result of below-replacement fertility and increased longevity.

- In the absence of migration, the declines in population size will be even greater than those projected and population ageing will be more rapid.

- Although fertility may rebound in the coming decades, few believe that fertility in most developed countries will recover sufficiently to reach replacement level in the foreseeable future, thus, making population decline inevitable in the absence of replacement migration.

- The projected population decline and population ageing will have profound and far-reaching consequences, forcing Governments to reassess many established economic, social and political policies and programmes, including those relating to international migration.

- For France, United Kingdom, the United States and the European Union, the numbers of migrants needed to offset population decline are less than or comparable to recent past experience. While this is also the case for Germany and the Russian Federation, the migration flows in the 1990s were relatively large due to reunification and dissolution, respectively.

- For Italy, Japan, the Republic of Korea and Europe, a level of immigration much higher than experience in the recent past would be needed to offset population decline.

- The numbers of migrants needed to offset declines in the working-age population are significantly larger than those needed to offset total population decline. Whether those larger numbers of migrants are within the realm of options open to Governments depends to a great extent on the social, economic and political circumstances of the particular country or region.

- If retirement ages remain essentially where they are today, increasing the size of the working-age population through international migration is the only option in the short to medium term to reduce declines in the potential support ratio.

- The levels of migration needed to offset population ageing (i.e., maintain potential support ratios) are extremely large, and in all cases entail vastly more immigration than occurred in the past.

- Maintaining potential support ratios at current levels through replacement migration alone seems out of reach, because of the extraordinarily large numbers of migrants that would be required.

- In most cases, the potential support ratios could be maintained at current levels by increasing the upper limit of the working-age population to roughly 75 years of age.

- The new challenges being brought about by declining and ageing populations will require objective, thorough and comprehensive reassessments of many established economic, social and political policies and programmes. Such reassessments will need to incorporate a long-term perspective. Critical issues to be addressed in those reassessments would include: (a) the appropriate ages for retirement; (b) the levels, types and nature of retirement and health-care benefits for the elderly; (c) the labour-force participation; (d) the assessed amounts of contributions from workers and employers to support retirement and health-care benefits for the increasing elderly population; and (e) policies and programmes relating to international migration, in particular replacement migration, and the integration of large numbers of recent migrants and their descendants.



Division de la Population
Départment des Affaires Économiques et Sociales
Nations Unies
New York

LES MIGRATIONS DE REMPLACEMENT : S'AGIT-IL D'UNE SOLUTION AU DÉCLIN ET AU VIEILLISSEMENT DES POPULATIONS?

RÉSUMÉ ANALYTIQUE

La Division de la population de l'Organisation des Nations Unies observe les tendances en matière de fécondité, de mortalité et des migrations dans tous le pays du monde, ce qui lui permet d'établir les prévisions et les projections démographiques officielles de l'Organisation. Parmi les tendances démographiques révélées par ces données, deux d'entre elles sont particulièrement saillantes : le déclin et le vieillissement de la population.

En centrant son attention sur ces deux tendances marquantes et majeures, la présente étude se penche sur la question de savoir si les migrations de remplacement offrent une solution au déclin et au vieillissement des populations. Ce type de migrations se rapporte aux migrations internationales qui s'avéreraient nécessaires pour compenser le déclin des populations, la baisse des populations d'âge actif et pour neutraliser le vieillissement de l'ensemble des populations.

L'étude calcule l'importance des migrations de remplacement et examine les répercussions possibles de ces migrations sur la taille et la structure par âge pour un assortiment de pays qui connaissent un profil de fécondité commun qui se situe sous le niveau de remplacement. Huit pays sont examinés : Allemagne, États-Unis d'Amérique, Fédération de Russie, France, Italie, Japon, République de Corée et Royaume-Uni. Deux régions sont aussi comprises : l'Europe et l'Union européenne. La période visée s'étend grossièrement sur un demi-siècle, c'est-à-dire de 1995 à 2050.

Selon les projections démographiques de l'Organisation des Nations Unies (variantes moyennes), il est prévu que le Japon et pratiquement tous les pays d'Europe connaîtront une diminution de leurs populations au cours des 50 prochaines années. Ainsi, la population de l'Italie qui se situe à 57 millions actuellement devrait décliner pour atteindre 41 millions d'ici à 2050. La population de la Fédération de Russie devrait passer de 147 à 121 millions entre 2000 et 2050. De même, la population du Japon qui s'élève à 127 millions actuellement passerait à 105 millions d'ici à 2050.

Outre la diminution en nombre d'habitants, le Japon et les pays d'Europe connaissent un processus de vieillissement relativement rapide. Ainsi, au Japon, au cours du prochain demi-

siècle, l'âge moyen de la population devrait augmenter d'environ huit ans, c'est-à-dire de 41 à 49 ans. Et la proportion de la population âgée de 65 ans ou plus devrait augmenter pour passer de 17 % actuellement à 32 %. De même en Italie, l'âge moyen de la population passera de 41 à 53 ans et la proportion de la population âgée de 65 ans ou plus qui est de 18 % actuellement atteindra 35 %.

Se fondant sur ces évaluations et ces projections, la présente étude envisage cinq scénarios différents s'agissant des courants migratoires internationaux nécessaires pour atteindre des objectifs ou des résultats démographiques spécifiques pour les huit pays et les deux régions visés ci-avant. Ces scénarios sont les suivants :

Scénario I. La variante moyenne des projections qui figurent au World Population Prospects de l'Organisation des Nations Unies, Révision de 1998.

Scénario II. La variante moyenne de la Révision de 1998, modifiée en présumant une migration zéro après 1995.

Scénario III. Ce scénario prévoit et présume une migration nécessaire pour assurer le maintien de la population totale au niveau le plus élevé possible à défaut d'une migration après 1995.

Scénario IV. Ce scénario prévoit et présume une migration nécessaire pour maintenir le total de la population d'âge actif (15 à 64 ans) à son plus haut niveau à défaut d'une migration après 1995.

Scénario V. Ce scénario prévoit et présume la migration requise pour assurer le maintien du rapport de soutien potentiel, c'est-à-dire le rapport de la population d'âge actif (15 à 64 ans) à la population âgée (65 ans et plus) au niveau le plus élevé qu'il serait possible d'atteindre à défaut d'une migration après 1995.

Les chiffres relatifs au nombre total et aux moyennes annuelles des migrants pour la période 2000-2050 pour chaque scénario figurent au tableau 1. Le scénario I montre le nombre de migrants présumés pour les huit pays et les deux régions dans la variante moyenne des projections des Nations Unies. Ainsi, dans le cas des États-Unis, le nombre total de migrants pour la période de 50 ans s'élève à 38 millions et la moyenne annuelle s'établit à 760 000. Le scénario II présume une migration zéro pour l'ensemble de la période; les populations qui en résultent et les structures d'âge sont fournies dans le texte du présent rapport.

Tableau 1. Nombre net de migrants par pays ou region
et scenarios, 2000-2050 (Milliers)

Scénario	I	II	III	IV	V
Pays ou région	Variante moyenne	Variante moyenne avec migration zéro	Population totale constante	Groupes d'âge constants 15-64	Rapport constant 15-64/65 ans ou +
		A. Chiffres totaux			
Allemagne	10 200	0	17 187	24 330	181 508
États-Unis	38 000	0	6 384	17 967	592 572
Fédération de Russie	5 448	0	24 896	35 756	253 379
France	325	0	1 473	5 459	89 584
Italie	310	0	12 569	18 596	113 831
Japon	0	0	17 141	32 332	523 543
République de Corée	-350	0	1 509	6 426	5 128 147
Royaume-Uni	1 000	0	2 634	6 247	59 722
Europe	18 779	0	95 869	161 346	1 356 932
Union européenne	13 489	0	47 456	79 375	673 999
		B. Chiffres annuels (moyenne)			
Allemagne	204	0	344	487	3 630
États-Unis	760	0	128	359	11 851
Fédération de Russie	109	0	498	715	5 068
France	7	0	29	109	1 792
Italie	6	0	251	372	2 268
Japon	0	0	343	647	10 471
République de Corée	-7	0	30	129	102 563
Royaume-Uni	20	0	53	125	1 194
Europe	376	0	1 917	3 227	27 139
Union européenne	270	0	949	1 588	13 480

Sauf en ce qui concerne les États-Unis, le nombre de migrants nécessaires au maintien du niveau de la population totale (scénario III) est beaucoup plus important que les chiffres présumés à la variante moyenne des projections des Nations Unies (scénario I). Ainsi, en Italie, le nombre total des migrants s'élève à 12,6 millions (ou 251 000 par année) au scénario III alors qu'il n'atteint que 0,3 million (ou 6 000 par année) au scénario I. S'agissant de l'Union européenne, les chiffres respectifs sont de 47 millions et de 13 millions (ou 949 000 par année et 270 000 par année).

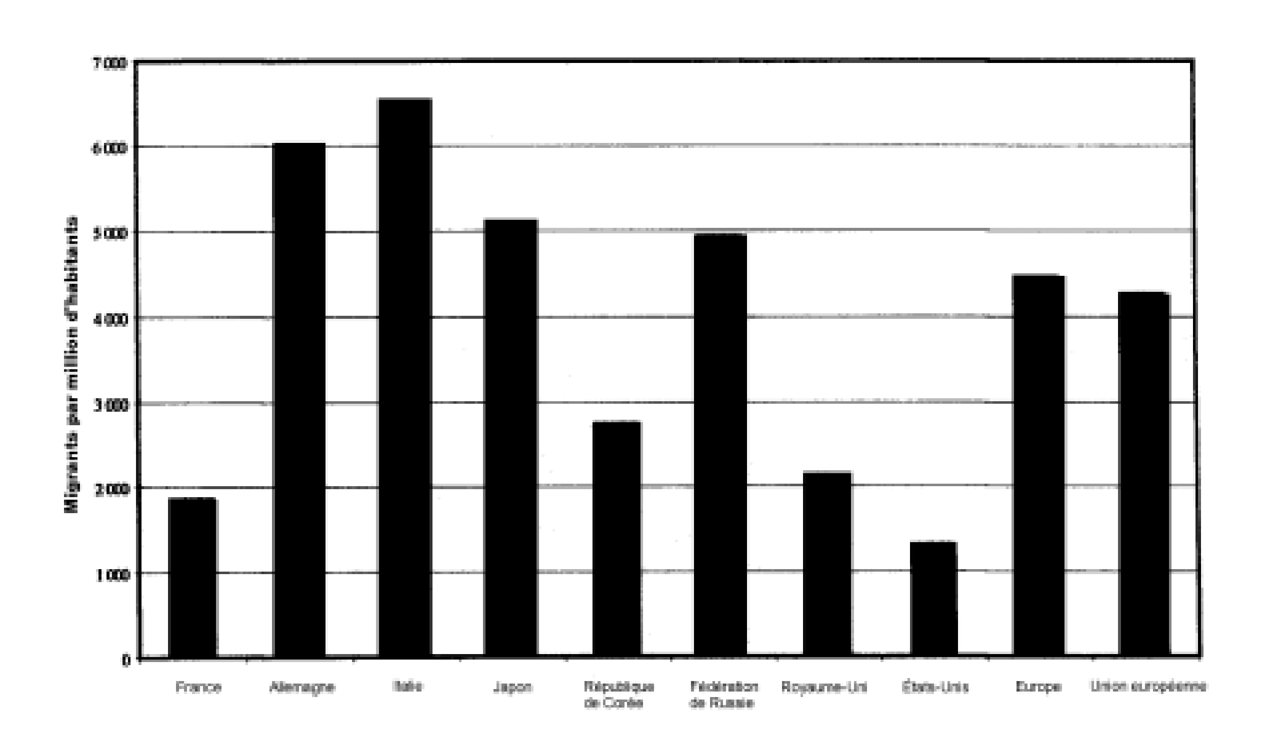
Au scénario IV où il s'agit de maintenir constant le niveau de la population d'âge actif (15 à 64 ans), le nombre des migrants est encore plus important que celui qui figure au scénario III.

Ainsi en Allemagne, le nombre total des migrants s'élève à 24 millions (ou 487 000 par année) au scénario IV alors qu'il n'atteint que 17 millions (ou 344 000 par année) au scénario III.

Le graphique I offre une comparaison standardisée en présentant les courants migratoires exprimés en millions d'habitants en l'an 2000. Cette comparaison démontre que, rapporté à la taille du pays, le nombre de migrants nécessaires pour assurer le maintien du niveau de la population d'âge actif (section IV) au cours de la période 2000 à 2050, est le plus élevé en Italie avec 6 500 immigrants annuels par million d'habitants, suivi de l'Allemagne avec 6 000 immigrants annuels par million d'habitants. Parmi les pays et les régions examinés dans le présent rapport, les États-Unis auront besoin du moindre nombre d'immigrants, c'est-à-dire 1 300 par million d'habitants pour éviter une diminution de sa population d'âge actif.

Au scénario V, le nombre d'immigrants qui permet de maintenir ce rapport potentiel constant peut être extrêmement important. Ainsi, au Japon, le nombre total des migrants au scénario V s'élève à 524 millions (10,5 millions par année). S'agissant de l'Union européenne, le nombre total des migrants dans le même scénario est de 674 millions (ou 13 millions par année).

Graphique 1. Nombre annuel moyen net des migrants nécessaires au maintien, entre 2000 et 2050, du niveau de la population d'âge actif, par million d'habitants en l'an 2000



Principales conclusions tirées de la présente étude :

- Au cours de la première moitié du 21e siècle, les projections indiquent que les populations de la plupart des pays développés connaitront une baisse et deviendront plus âgées en raison d'une fécondité insuffisante pour assurer le remplacement et d'une longévité accrue;

- À défaut de migrations, le déclin des populations sera supérieur aux projections et leur vieillissement ira en s'accélérant;

- Bien que la fécondité soit susceptible de connaître des remontées au cours des prochaines décennies, ils sont peu nombreux à croire que la fécondité dans la plupart des pays développés puisse augmenter suffisamment pour atteindre des niveaux de remplacement dans un avenir prévisible. Ceci rend inévitable une baisse des populations en l'absence de migrations de remplacement;

- Le déclin prévu des populations et leur vieillissement auront des conséquences profondes et de portée considérable, obligeant les gouvernements à réviser beaucoup de leurs options et programmes économiques, sociaux et politiques, y compris ceux concernant les migrations internationales;

- S'agissant de la France, des États-Unis, du Royaume-Uni et de l'Union européenne, le nombre des migrants nécessaires pour compenser le déclin des populations est soit inférieur soit comparable aux récentes expériences. Bien que cela soit aussi applicable à l'Allemagne et à la Fédération de Russie, les courants migratoires des années 90 se sont avérés relativement importants en raison respectivement d'une réunification et d'une dissolution;

- En ce qui concerne l'Italie, le Japon, la République de Corée et l'Europe, un niveau d'immigration beaucoup plus important que dans le passé sera nécessaire pour compenser la baisse des populations;

- Le nombre des migrants nécessaires pour compenser la baisse de la population d'âge actif est nettement plus important que celui requis pour compenser la baisse de l'ensemble de la population. Que ces nombres plus importants de migrants représentent un choix à la portée des gouvernements dépend dans une large mesure des circonstances sociales, économiques et politiques d'un pays ou d'une région donné;

- Si les âges de la retraite demeurent grosso modo ce qu'ils sont à l'heure actuelle, l'accroissement de la population d'âge actif par le biais d'une migration internationale demeurera, pour le court et le moyen terme, le seul choix permettant de réduire l'importance de la baisse;

- La gamme des niveaux de migration nécessaires pour compenser le vieillissement des populations (c'est-à-dire pour maintenir un rapport de soutien potentiel) est extrêmement large et exige dans tous les cas de figure une immigration beaucoup plus importante que dans le passé;

- Le maintien des rapports de soutien potentiels à leurs niveaux actuels uniquement en ayant recours à une migration de remplacement semble inaccessible en raison du nombre extraordinairement important des migrants qui s'avéreraient nécessaires;

- Dans la plupart des cas, les rapports de soutien potentiels pourront être maintenus à leurs niveaux actuels en augmentant la limite supérieure de la population d'âge actif à environ 75 ans;

- Les nouveaux défis résultant de la baisse et du vieillissement des populations exigeront une série de réévaluations objectives, complètes et approfondies de beaucoup d’ options et programmes économiques, sociaux et politiques. De telles réévaluations devront être abordées dans une perspective à long terme. Dans le contexte de ces réévaluations, les questions fondamentales seront les suivantes : a) l'âge approprié de la retraite; b) les niveaux, les types et la nature des prestations de retraite et de soins de santé destinées aux personnes âgées; c) la participation de la population active; d) la contribution des employés et des employeurs aux prestations de retraite et de soins de santé destinées à une population âgée de plus en plus importante; et e) des politiques et des programmes relatifs aux migrations internationales, notamment les migrations de remplacement et l'intégration d'un nombre important de migrants récents et de leurs descendants.



Abteilung Bevölkerungsfragen

Vereinte Nationen

BESTANDSERHALTUNGSMIGRATION: EINE LÖSUNG FÜR ABNEHMENDE UND ALTERNDE BEVÖLKERUNGEN?

ZUSAMMENFASSUNG

Die Abteilung Bevölkerungsfragen der Vereinten Nationen verfolgt die Fruchtbarkeits-, Sterblichkeits- und Migrationstrends für alle Länder der Welt und erstellt auf dieser Grundlage die offiziellen Schätzungen und Prognosen der Vereinten Nationen zur Bevölkerungsentwicklung. Zwei der demografischen Trends, die diese Zahlen aufzeigen, springen dabei besonders ins Auge: der Bevölkerungsrückgang und die Bevölkerungsalterung.

Die vorliegende Studie konzentriert sich auf diese beiden auffälligen, kritischen Trends und befasst sich mit der Frage, ob Bestandserhaltungsmigration eine Lösung für den Rückgang und die Alterung der Bevölkerung darstellt. Der Begriff "Bestandserhaltungsmigration" bezieht sich auf die Zuwanderung aus dem Ausland, die benötigt wird, um den Bevölkerungsrückgang, das Schrumpfen der Erwerbsfähigenbevölkerung sowie die allgemeine Überalterung der Bevölkerung auszugleichen.

Im Rahmen der Studie wurden für eine Reihe von Ländern, deren Fruchtbarkeitsziffern allesamt unter dem Bestandserhaltungsniveau liegen, die Höhe der zur Bestandserhaltung erforderlichen Zuwanderung errechnet und die möglichen Auswirkungen dieser Zuwanderung auf den Umfang und die Altersstruktur der Bevölkerung untersucht. Die acht untersuchten Länder sind Deutschland, Frankreich, Großbritannien, Italien, Japan, die Republik Korea, die Russische Föderation und die Vereinigten Staaten. Ebenfalls untersucht wurden zwei Regionen: Europa und die Europäische Union. Der untersuchte Zeitraum erstreckt sich ungefähr über ein halbes Jahrhundert, von 1995 bis 2050.

Nach der mittleren Variante der Bevölkerungsprognosen der Vereinten Nationen wird die Bevölkerung Japans und praktisch aller Länder Europas im Laufe der nächsten 50 Jahre schrumpfen. So wird beispielsweise die Einwohnerzahl Italiens von derzeit 57 Millionen Menschen auf voraussichtlich 41 Millionen im Jahr 2050 sinken. Für die Russische Föderation wird von 2000 bis 2050 ein Rückgang von 147 Millionen auf 121 Millionen erwartet. Ebenso wird die Bevölkerung Japans von derzeit 127 Millionen bis 2050 auf voraussichtlich 105 Millionen zurückgehen.

Zusätzlich zu dem Rückgang ihrer Bevölkerungen unterliegen Japan und die Länder Europas einem verhältnismäßig raschen Alterungsprozess. So wird sich beispielsweise das Medianalter der Bevölkerung Japans in den nächsten 50 Jahren voraussichtlich um acht Jahre von 41 auf 49 Lebensjahre erhöhen. Darüber hinaus wird der Bevölkerungsanteil der 65-jährigen oder älteren Japaner von derzeit 17 Prozent auf voraussichtlich 32 Prozent ansteigen. Gleichermaßen

wird das Medianalter der italienischen Bevölkerung von 41 auf 53 Lebensjahre steigen und der Bevölkerungsanteil der 65-jährigen oder Älteren von 18 Prozent auf 35 Prozent anwachsen.

Aufbauend auf diesen Schätzungen und Prognosen werden in der vorliegenden Studie fünf verschiedene Szenarien hinsichtlich der internationalen Wanderungsströme entworfen, deren es bedarf, um in den genannten acht Ländern und zwei Regionen bestimmte Bevölkerungsziele oder -resultate zu erreichen. Es handelt sich hierbei um die folgenden fünf Szenarien:

Szenario I. Die mittlere Variante der Vorausschätzungen aus den *World Population Prospects: 1998 Revision* (Weltbevölkerungsprognosen: Revision 1998) der Vereinten Nationen.

Szenario II. Die mittlere Variante der *1998 Revision*, modifiziert durch die Annahme einer "Nullwanderung" nach 1995.

Szenario III. Bei diesem Szenario wird die Migration kalkuliert und unterstellt, die erforderlich ist, um die Gesamtbevölkerung auf dem höchsten Stand zu erhalten, den sie ohne Migration nach 1995 erreichen würde.

Szenario IV. Bei diesem Szenario wird die Migration kalkuliert und unterstellt, die erforderlich ist, um die Bevölkerung im erwerbsfähigen Alter (15 bis 64 Jahre) auf dem höchsten Stand zu erhalten, den sie ohne Migration nach 1995 erreichen würde.

Szenario V. Bei diesem Szenario wird die Migration kalkuliert und unterstellt, die erforderlich ist, um das "potenzielle Unterstützungsverhältnis", d. h. das Verhältnis zwischen der Zahl der Menschen im erwerbsfähigen Alter (15 bis 64 Jahre) und der Zahl der Senioren (65 Jahre oder älter), auf dem höchsten Stand zu erhalten, den es ohne Migration nach 1995 erreichen würde.

Die Gesamtzahlen und die jährlichen Durchschnittszahlen der Migranten für den Zeitraum 2000-2050 sind in Tabelle 1 für jedes Szenario aufgeführt. Szenario I zeigt die Zahl der Migranten, die bei der mittleren Variante der VN-Prognosen für die acht Länder und zwei Regionen angenommen werden. So liegt zum Beispiel die Zahl der Menschen, die insgesamt im Zeitraum von 50 Jahren in die Vereinigten Staaten einwandern, bei 38 Millionen und im jährlichen Durchschnitt bei 760.000. In Szenario II wird eine Nullwanderung für den gesamten Zeitraum unterstellt; die sich daraus ergebenden Bevölkerungszahlen und Altersstrukturen sind im Text des Berichts angegeben.

TABELLE 1. NETTOZAHL DER MIGRANTEN NACH LAND BZW. REGION UND SZENARIO (2000-2050)
(*in Tausend*)

Szenario	*I*	*II*	*III*	*IV*	*V*
Land/Region	*mittlere Variante*	*mittlere Variante mit Nullwanderung*	*konstante Gesamtbevölkerung*	*konstante Altersgruppe (15-64 J.)*	*konstantes Verhältnis 15-64 J./65 J. und älter*
		A. Gesamtzahl			
Deutschland	10.200	0	17.187	24.330	181.508
Frankreich	325	0	1.473	5.459	89.584
Großbritannien	1.000	0	2.634	6.247	59.722
Italien	310	0	12.569	18.596	113.381
Japan	0	0	17.141	32.332	523.543
Republik Korea	-350	0	1.509	6.426	5.128.147
Russische Föderation	5.448	0	24.896	35.756	253.379
Vereinigte Staaten	38.000	0	6.384	17.967	592.572
Europa	18.779	0	95.869	161.346	1.356.932
Europäische Union	13.489	0	47.456	79.375	673.999
		B. Jährliche Durchschnittszahl			
Deutschland	204	0	344	487	3.630
Frankreich	7	0	29	109	1.792
Großbritannien	20	0	53	125	1.194
Italien	6	0	251	372	2.268
Japan	0	0	343	647	10.471
Republik Korea	-7	0	30	129	102.563
Russische Föderation	109	0	498	715	5.068
Vereinigte Staaten	760	0	128	359	11.851
Europa	376	0	1.917	3.227	27.139
Europäische Union	270	0	949	1.588	13.480

Mit Ausnahme der Vereinigten Staaten ist die Zahl der Einwanderer, die erforderlich ist, um den Bestand der Gesamtbevölkerung zu erhalten (Szenario III), beträchtlich höher als die bei der mittleren Variante der VN-Prognosen angenommene Zahl (Szenario I). In Italien zum Beispiel beträgt die Gesamtzahl der Einwanderer nach Szenario III 12,6 Millionen (bzw. 251.000 pro Jahr) gegenüber 0,3 Millionen (bzw. 6.000 pro Jahr) nach Szenario I. Für die Europäische Union liegen die entsprechenden Zahlen bei 47 Millionen gegenüber 13 Millionen (bzw. 949.000 pro Jahr gegenüber 270.000 pro Jahr).

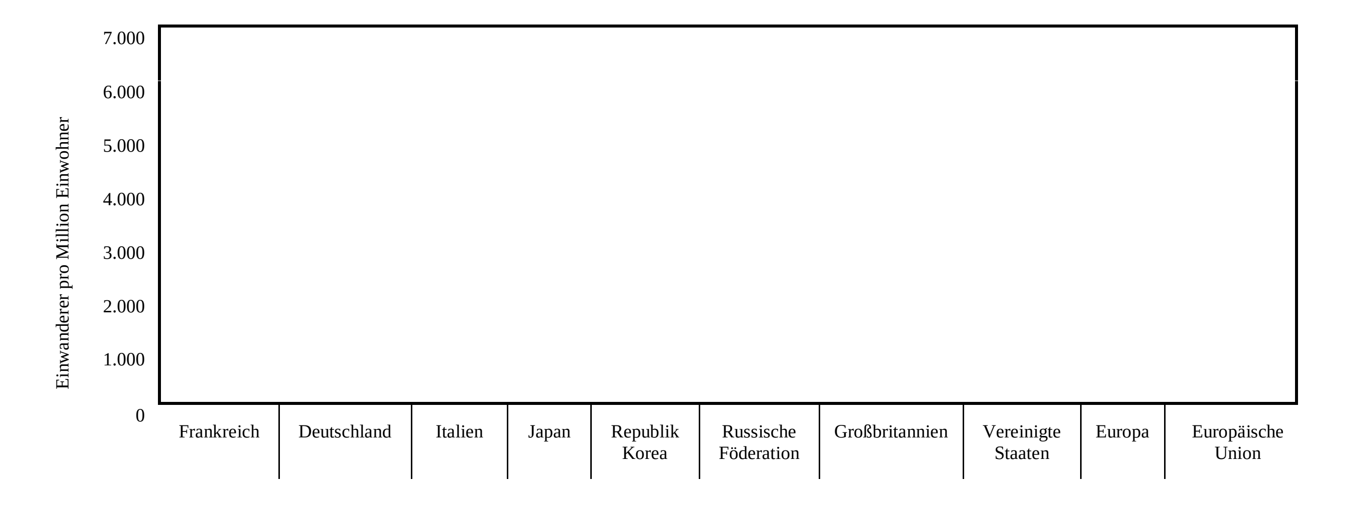
In Szenario IV, das darauf abzielt, die Bevölkerung im erwerbsfähigen Alter (15 bis 64 Jahre) konstant zu halten, ist die Zahl der Einwanderer sogar noch höher als in Szenario III. So läge beispielsweise in Deutschland die Gesamtzahl der Einwanderer nach Szenario IV bei 24 Millionen (bzw. 487.000 pro Jahr) gegenüber 17 Millionen (bzw. 344.000 pro Jahr) nach Szenario III.

Abbildung 1 zeigt einen standardisierten Vergleich der Zuwanderungsströme pro Million Einwohner (Stand: 2000). Aus diesem Vergleich geht hervor, dass im Verhältnis zur Landesgröße die Zahl der Einwanderer, die im Zeitraum 2000-2050 pro Jahr benötigt wird, um den Bestand der Bevölkerung im erwerbsfähigen Alter zu erhalten (Szenario IV), mit 6.500 Einwanderern auf

1 Million Einwohner in Italien am höchsten ist, gefolgt von Deutschland mit 6.000 Einwanderern pro Jahr auf 1 Million Einwohner. Von den in diesem Bericht untersuchten Ländern und Regionen benötigten die Vereinigten Staaten mit etwa 1.300 Einwanderern auf 1 Million Einwohner die geringste Zahl von Einwanderern, um einen Rückgang ihrer Bevölkerung im erwerbsfähigen Alter zu verhindern.

Die Zahlen in Szenario V, das auf die Konstanthaltung des potenziellen Unterstützungsverhältnisses gerichtet ist, sind außerordentlich hoch. Für Japan beträgt zum Beispiel die Gesamtzahl der Einwanderer nach Szenario V 524 Millionen (bzw. 10,5 Millionen pro Jahr). Für die Europäische Union liegt diese Zahl bei 674 Millionen (bzw. 13 Millionen pro Jahr).

Abbildung 1. Jährliche Nettodurchschnittszahl der Einwanderer, die zwischen 2000 und 2050 pro Million Einwohner erforderlich ist, um den Bestand der Bevölkerung im erwerbsfähigen Alter zu erhalten (Stand: 2000)



Die wichtigsten Erkenntnisse der Studie:

- In der ersten Hälfte des 21. Jahrhunderts dürfte die Bevölkerung in den meisten Industriestaaten auf Grund von unterhalb der Bestandserhaltung liegenden Fruchtbarkeitsraten und steigender Lebenserwartung zurückgehen.
- Ohne Zuwanderung wird die Bevölkerung noch drastischer zurückgehen und noch rascher altern als nach den bisherigen Prognosen.
- Obwohl die Fruchtbarkeitsrate in den nächsten Jahrzehnten durchaus wieder ansteigen könnte, glauben nur wenige Experten, dass sie ein Niveau erreichen wird, das in den meisten Industriestaaten in absehbarer Zukunft den Bevölkerungsbestand sichern kann. Daher wird ohne Bestandserhaltungsmigration ein Rückgang der Bevölkerung unvermeidlich sein.
- Der prognostizierte Bevölkerungsrückgang und -alterungsprozess wird tiefgreifende und weitreichende Folgen haben und die Regierungen zwingen, zahlreiche überkommene Maßnahmen und Programme im wirtschaftlichen, sozialen und politischen Bereich, so auch soweit sie die Zuwanderung aus dem Ausland betreffen, neu zu bewerten.
- Für Frankreich, Großbritannien, die Vereinigten Staaten und die Europäische Union ist die Zahl der Einwanderer, die erforderlich ist, um den Bevölkerungsrückgang auszugleichen, geringer oder etwa gleich wie die Zuwanderungsströme der jüngeren Vergangenheit. Zwar trifft dies auch auf Deutschland und die Russische Föderation zu, aber die Zu-

wanderungsströme waren in den neunziger Jahren auf Grund der Wiedervereinigung beziehungsweise der Auflösung der Sowjetunion verhältnismäßig groß.

- Italien, Japan, die Republik Korea und Europa bräuchten viel mehr Zuwanderer als in den letzten Jahren, um den Bevölkerungsrückgang auszugleichen.

- Die Zahl der Einwanderer, die notwendig ist, um ein Schrumpfen der Bevölkerung im erwerbsfähigen Alter auszugleichen, übersteigt diejenige, die einen Rückgang der Gesamtbevölkerung ausgleichen würde, um ein Erhebliches. Ob solche höheren Einwanderungszahlen zu den Optionen gehören, die den Regierungen zur Verfügung stehen, hängt zum großen Teil von den sozialen, wirtschaftlichen und politischen Verhältnissen des jeweiligen Landes beziehungsweise der jeweiligen Region ab.

- Sollte das Pensionsalter im Wesentlichen auf dem heutigen Stand bleiben, ist eine Erhöhung der Bevölkerung im erwerbsfähigen Alter mittels Zuwanderung aus dem Ausland kurz- bis mittelfristig die einzige Option, durch die sich eine Schwächung des potenziellen Unterstützungsverhältnisses abfangen ließe.

- Die Wanderungsströme, die notwendig wären, um die Bevölkerungsalterung auszugleichen (d. h. um das potenzielle Unterstützungsverhältnis aufrechtzuerhalten) sind extrem groß, und es müssten in allen Fällen weitaus höhere Einwanderungszahlen als in der Vergangenheit erreicht werden.

- Das potenzielle Unterstützungsverhältnis allein durch Bestandserhaltungsmigration auf dem derzeitigen Niveau zu halten, erscheint unerreichbar, da es dafür außerordentlich hoher Einwanderungszahlen bedarf.

- In den meisten Fällen könnte das potenzielle Unterstützungsverhältnis auf dem derzeitigen Niveau gehalten werden, wenn die Obergrenze der Bevölkerung im erwerbsfähigen Alter auf etwa 75 Jahre angehoben würde.

- Die neuen Herausforderungen, die durch eine schrumpfende und alternde Bevölkerung entstehen, werden objektive, eingehende und umfassende Neubewertungen zahlreicher überkommener Maßnahmen und Programme im wirtschaftlichen, sozialen und politischen Bereich erfordern. Solche Neubewertungen bedürfen einer langfristigen Perspektive. Zu den kritischen Fragen, die angegangen werden müssen, gehören: a) das geeignete Ruhestandsalter, b) Höhe und Art der Renten- und Krankenversicherungsleistungen für die ältere Generation, c) die Zahl der Erwerbstätigen, d) die Höhe der Arbeitnehmer- und Arbeitgeberbeiträge zur Deckung der Renten- und Krankenversicherungsleistungen für die wachsende Zahl älterer Menschen und e) Maßnahmen und Programme im Zusammenhang mit der internationalen Wanderung, insbesondere der Bestandserhaltungsmigration, und der Eingliederung einer großen Zahl neuer Einwanderer und ihrer Nachkommen.



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Департамент по экономическим и социальным вопросам
Организация Объединенных Наций

ЗАМЕЩАЮЩАЯ МИГРАЦИЯ: ЯВЛЯЕТСЯ ЛИ ОНА РЕШЕНИЕМ ПРОБЛЕМ СОКРАЩЕНИЯ И СТАРЕНИЯ НАСЕЛЕНИЯ?

РЕЗЮМЕ

Отдел народонаселения Департамента по экономическим и социальным вопросам Организации Объединенных Наций осуществляет по всем странам мира мониторинг тенденций в области рождаемости, смертности и миграции и на его основе составляет официальные оценки и прогнозы Организации Объединенных Наций. Среди демографических тенденций, которые выявляются на основе полученных данных, особенно заметны две — тенденция сокращения численности населения и тенденция его демографического старения.

С точки зрения прежде всего этих двух очевидных и крайне важных тенденций в настоящем исследовании рассматривается вопрос о том, является ли замещающая миграция одним из путей решения проблем сокращения и старения населения. Под замещающей миграцией имеется в виду такая международная миграция, в которой нуждается страна, для того чтобы компенсировать сокращение численности населения в целом и населения трудоспособного возраста в частности, а также для смягчения последствий общего старения населения.

В настоящем исследовании представлены расчеты масштабов замещающей миграции и рассматривается ее возможное влияние на численность и возрастную структуру населения ряда стран, общим для которых является то, что рождаемость в них не достигает уровня воспроизводства населения. Рассматриваются восемь стран — Германия, Италия, Республика Корея, Российская Федерация, Соединенное Королевство Великобритании и Северной Ирландии, Соединенные Штаты Америки, Франция и Япония. Сюда же включены и два региона — Европа и Европейский союз. Охватываемый период времени составляет примерно полвека — с 1995 по 2050 год.

Согласно демографическим прогнозам Организации Объединенных Наций (средний вариант), ожидается, что в течение ближайших 50 лет численность населения Японии и практически всех стран Европы будет сокращаться. Например, население Италии, ныне составляющее 57 млн. человек, к 2050 году сократится, по прогнозам, до 41 млн. Население Российской Федерации за период с 2000 по 2050 год предположительно сократится со 147 млн. человек до 121 млн. Аналогичным образом, прогнозируется, что население Японии, ныне составляющее 127 млн. человек, к 2050 году уменьшится до 105 млн.

Наряду с сокращением численности населения в Японии и странах Европы идет сравнительно быстрый процесс старения населения. Ожидается, например, что в Японии средний возраст населения в ближайшие полстолетия возрастет примерно на восемь лет, то есть поднимется с 41 года до 49 лет, а доля возрастной группы 65 лет и старше увеличится в Японии с нынешних 17 до 32 процентов. Аналогичным образом, в Италии средний возраст населения возрастет с 41 года до 53 лет, а доля населения в возрасте от 65 лет и старше поднимется с 18 до 35 процентов.

В настоящем исследовании на основе этих оценок и прогнозов рассматриваются пять различных сценариев, касающихся международных миграционных потоков, которые необходимы для достижения конкретных демографических целей или результатов по упомянутым выше восьми странам и двум регионам. Речь идет о следующих пяти сценариях:

Сценарий I. Средний вариант прогнозов, содержащийся в издании Организации Объединенных Наций *World Population Prospects: 1998 Revision.*

Сценарий II. Средний вариант, представленный в *1998 Revision*, но с коррективами, предполагающими, что после 1995 года миграция будет находиться на нулевом уровне.

Сценарий III. Этот сценарий рассчитан исходя из варианта миграции, требуемой для сохранения общей численности населения на том максимальном уровне, которого она достигла бы в случае прекращения миграции после 1995 года.

Сценарий IV. Этот сценарий рассчитан исходя из варианта миграции, требуемой для сохранения численности населения трудоспособного возраста (от 15 до 64 лет) на том максимальном уровне, которого она достигла бы в случае прекращения миграции после 1995 года.

Сценарий V. Этот сценарий рассчитан исходя из варианта миграции, требуемой для сохранения потенциального коэффициента поддержки пожилого населения (КПП), то есть отношения численности населения трудоспособного возраста (от 15 до 64 лет) к численности населения старшего возраста (65 лет и старше), на том максималь-ном уровне, которого он достиг бы в случае прекращения миграции после 1995 года.

В таблице 1 представлены данные о предполагаемой по каждому из сценариев общей и среднегодовой численности мигрантов в период 2000—2050 годов. В колонке, отражающей сценарий I, представлены расчетные цифры численности мигрантов в вышеупомянутых восьми странах и двух регионах, содержащиеся в среднем варианте прогнозов Организации Объединенных Наций. Например, для Соединенных Штатов прогнозируемая общая численность мигрантов составит в этот пятидесятилетний период 38 млн. человек, а среднегодовая — 760 тыс. По сценарию II в течение всего этого периода предполагается нулевая миграция, а вытекающие из такого варианта данные о численности и возрастной структуре населения содержатся в тексте настоящего доклада.

Таблица 1. Общая численность мигрантов (в разбивке по странам или регионам и сценариям), 2000—2050 годы
(*тыс. человек*)

Сценарий	I	II	III	IV	V
Страна или регион	*Средний вариант*	*Средний вариант при нулевой миграции*	*Для поддержания общей численности населения*	*Для поддержания численности возрастной группы в возрасте 15—64 лет*	*Для поддержания отношения численности населения в возрасте 15—64 лет к численности населения в возрасте 65 лет и старше*
		А. Общая численность			
Франция	325	0	1 473	5 459	89 584
Германия	10 200	0	17 187	24 330	181 508
Италия	310	0	12 569	18 596	113 381
Япония	0	0	17 141	32 332	523 543
Республика Корея	-350	0	1 509	6 426	5 128 147
Российская Федерация	5 448	0	24 896	35 756	253 379
Соединенное Королевство	1 000	0	2 634	6 247	59 722
Соединенные Штаты	38 000	0	6 384	17 967	592 572
Европа	18 779	0	95 869	161 346	1 356 932
Европейский союз	13 489	0	47 456	79 375	673 999
		В. Численность в среднем за год			
Франция	7	0	29	109	1 792
Германия	204	0	344	487	3 630
Италия	6	0	251	372	2 268
Япония	0	0	343	647	10 471
Республика Корея	-7	0	30	129	102 563

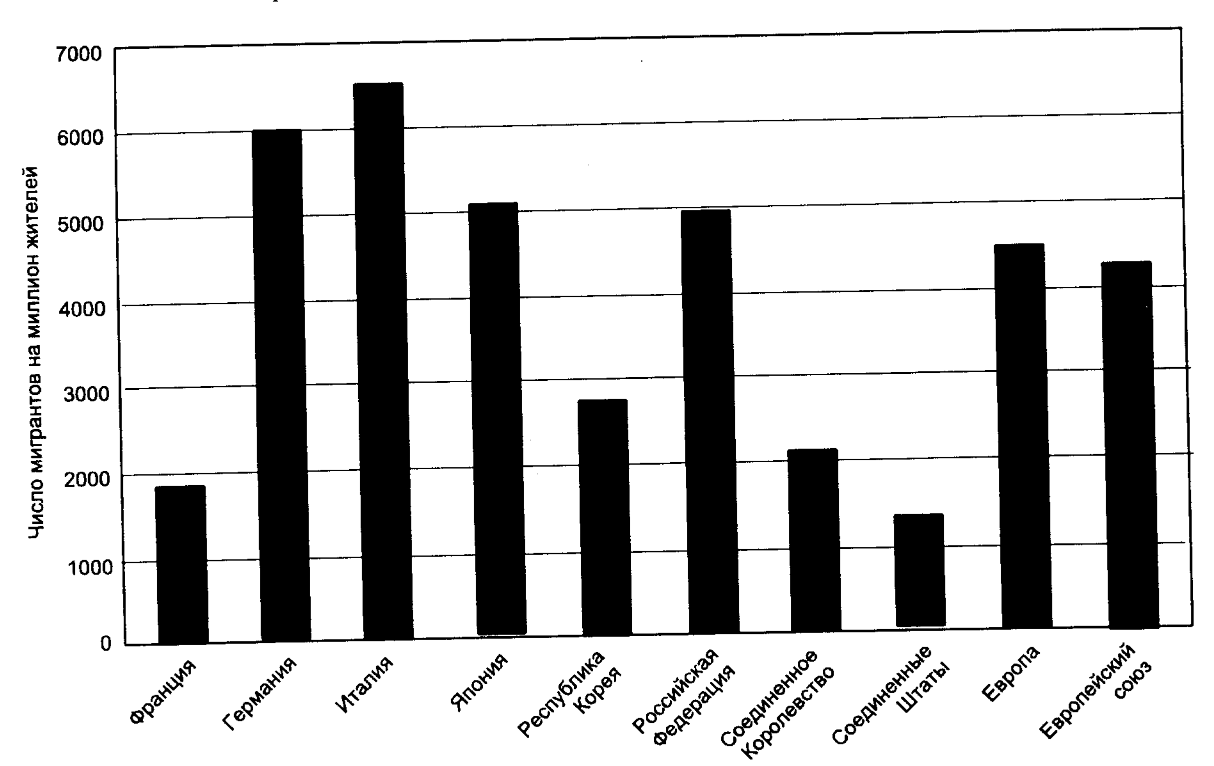
Российская Федерация	109	0	498	715	5 068
Соединенное Королевство	20	0	53	125	1 194
Соединенные Штаты	760	0	128	359	11 851
Европа	376	0	1 917	3 227	27 139
Европейский союз	270	0	949	1 588	13 480

Везде, кроме Соединенных Штатов, число мигрантов, необходимое для поддержания общей численности населения (сценарий III), значительно выше предполагаемого прогноза в среднем варианте, подготовленном Организацией Объединенных Наций (сценарий I). Для Италии, например, по сценарию III общее число мигрантов должно составлять 12,6 млн. (или 251 тыс. в год) против 0,3 млн. (или 6 тыс. в год) по сценарию I. Для Европейского союза соответствующие показатели составляют 47 млн. против 13 млн. (или 949 тыс. против 270 тыс. ежегодно).

По сценарию IV, то есть для поддержания численности населения трудоспособного возраста (от 15 до 64 лет) на постоянном уровне, численность мигрантов должна быть даже выше, чем по сценарию III. Для Германии, например, по сценарию IV общее число мигрантов должно составлять 24 млн. (или 487 тыс. в год) против 17 млн. (или 344 тыс. в год) по сценарию III.

На диаграмме 1 представлена обобщенная картина сравнительных данных по миграционным потокам в расчете на миллион жителей в 2000 году. Эта сравнительная картина показывает, что с учетом размеров страны число мигрантов, необходимое для поддержания численности населения трудоспособного возраста в 2000—2050 годах (сценарий IV), оказывается наибольшим для Италии (6500 иммигрантов на миллион жителей в год), а за ней идет Германия (6 тыс. иммигрантов на миллион жителей в год). Из всех стран и регионов, рассматриваемых в настоящем докладе, наименьшее число иммигрантов, необходимое для того, чтобы предотвратить сокращение численности населения трудоспособного возраста, понадобится Соединенным Штатам (примерно 1300 иммигрантов на миллион жителей).

Диаграмма 1. Среднегодовое общее число мигрантов на период 2000—2050 годов, необходимое для поддержания численности населения трудоспособного возраста (в расчете на миллион жителей, по состоянию на 2000 год)



Особенно высоки показатели, прогнозируемые по сценарию V, в котором предполагается сохранение потенциального коэффициента поддержки пожилых и престарелых на постоянном уровне. Например, для Японии общая численность мигрантов по сценарию V составит 524 млн. человек (или 10,5 млн. в год). Для Европейского союза по этому же сценарию общая численность мигрантов должна составить 674 млн. (или 13 млн. ежегодно).

Основные выводы по результатам настоящего исследования:

- Согласно расчетам, в результате того, что рождаемость не достигает уровня воспроизводства населения при одновременном увеличении продолжительности жизни численность населения наиболее развитых стран в первой половине XXI века сократится, а само население постареет.

- При отсутствии миграции снижение численности населения будет даже значительнее, чем по прогнозам, а процесс его старения будет происходить более быстрыми темпами.

- Несмотря на то что в ближайшие десятилетия рождаемость может на некоторое время повыситься, мало кто полагает, что в наиболее развитых странах она в обозримом будущем достигнет уровня воспроизводства, из чего следует, что при отсутствии замещающей миграции сокращения численности населения не избежать.

- Прогнозируемые сокращение численности и старение населения будут иметь глубокие и далеко идущие последствия, что заставит правительства пересмотреть многие действующие стратегии и программы в экономической, социальной и политической областях, в том числе и в области международной миграции.

- Для Соединенного Королевства, Соединенных Штатов, Франции и Европейского союза число мигрантов, необходимое для компенсации сокращения численности населения, будет меньшим или сопоставимым в сравнении с показателями последнего времени. То же относится также к Германии и Российской Федерации, однако там миграционные потоки 90-х годов были относительно велики ввиду, соответственно, воссоединения и распада страны.

- Для Италии, Республики Корея, Японии и Европы компенсация сокращения численности населения потребует гораздо более масштабной иммиграции, чем это было в недавнем прошлом.

- Число мигрантов, которое потребуется для компенсации сокращения численности населения трудоспособного возраста, намного больше того, что необходимо для компенсации сокращения общей численности населения. Удастся ли правительствам обеспечить приток столь большого числа мигрантов, во многом зависит от социальных, экономических и политических обстоятельств в той или иной конкретной стране либо в том или ином регионе.

- Если границы пенсионного возраста останутся в целом такими же, как в настоящее время, то в краткосрочном и среднесрочном плане единственным вариантом, позволяющим ослабить воздействие снижения коэффициента поддержки пожилых, будет увеличение численности населения трудоспособного возраста за счет международной миграции.

- Уровни миграции, необходимой для компенсации старения населения (то есть для сохранения коэффициента поддержки), будут чрезвычайно высокими и во всех случаях приведут к намного более массовой иммиграции, чем это было в прошлом.

- Сохранение коэффициентов поддержки на их нынешних уровнях с помощью одной лишь замещающей миграции представляется недостижимым, поскольку для этого потребуется чрезвычайно большое число иммигрантов.

- В большинстве случаев сохранения коэффициентов поддержки на их нынешних уровнях можно было бы добиться за счет повышения верхней границы трудоспособного возраста примерно до 75 лет.

- Новые проблемы, возникающие в связи с сокращением численности и старением населения, потребуют объективного, глубокого и всестороннего пересмотра многих устоявшихся основ политики и программ в экономической, социальной и политической областях. Такой пересмотр необходимо осуществлять с учетом долгосрочной перспективы. В ходе пересмотра потребуется, среди прочего, рассмотреть следующие важнейшие вопросы: a) оптимальный возраст выхода на пенсию; b) размеры, виды и характер пенсионных и медицинских пособий для престарелых; c) степень участия самих работающих; d) размеры обязательных взносов трудящихся и предпринимателей на финансирование пенсионных и медицинских пособий для все возрастающего числа престарелых; и e) необходимые меры политического характера и программы в отношении международной миграции, в частности замещающей миграции, а также проблему интеграции большого числа недавних иммигрантов и их потомков.

I. INTRODUCTION: THE ISSUES

As part of its regular work programme, the United Nations Population Division continuously monitors fertility, mortality and migration trends for all countries of the world, as a basis for producing the official United Nations population estimates and projections. Among the demographic trends revealed by those figures, two are particularly salient: population decline and population ageing.

Focusing on these two striking and critical trends, the present study addresses the question of whether replacement migration is a solution to population decline and population ageing. Replacement migration refers to the international migration that would be needed to offset declines in the size of population, the declines in the population of working age, as well as to offset the overall ageing of a population.

Eight countries and two regions which are treated as individual countries, have been selected to be in this study. All of them are relatively large countries that have below-replacement fertility. The countries and regions are: France, Germany, Italy, Japan, Republic of Korea, Russian Federation, United Kingdom, United States, Europe and the European Union. Through the technique of population projection, calculations are made of the amount of replacement migration that would be necessary for each of the eight countries and two regions to offset the expected declines in the size of the total population and working-age population, as well as to offset the overall ageing of the population.

The process of population aging, i.e., the transformation of the age structure to relatively greater proportions in the older age groups, is being brought about by declining fertility and increased longevity. Since fertility and mortality levels have to some extent declined in most populations, population ageing is a nearly universal process. Where fertility has dropped to particularly low levels, such as in Europe and Japan, the ageing of population is reaching unprecedented proportions.

In a smaller, yet significant number of countries, fertility has dropped so much that deaths exceed births, resulting in declining populations. Table I.1 shows the list of countries that are projected to have smaller populations in 2050 compared to 2000 and the extent to which they will be experiencing population decline and ageing. In most cases, populations that are simultaneously ageing and declining will experience severe reductions in the ratio of persons of working age (15 to 64 years) to older persons (65 years or older).

These observations evoke an important set of issues and related questions. The first concerns the robustness of the projection figures. The second issue deals with the social and economic consequences of such unprecedented demographic trends and population changes. The third centers on the extent to which replacement migration is a solution to these expected trends and changes. And finally, the fourth issue relates to the policy and programmatic implications of the results from this study.

With regard to the figures themselves, it should be noted that most of the countries where population is projected to decline have well-developed statistical systems and considerable amounts of data and analytical insight on their demographic situation and trends. Having such a sound basis is of great help to suggest what the most likely course of events in the future would be and how various alternative scenarios would diverge from or fall in line with present population trends.

TABLE I.1. COUNTRIES WHOSE POPULATION IS EXPECTED TO DECLINE BETWEEN 2000 AND 2050: CHANGES IN THE TOTAL POPULATION AND IN THE PROPORTION AGED 65 YEARS OR OLDER

	Population (thousands)		*Population Change*		*Per cent 65 years or older*		*Change in proportion 65 years or older*
*Country or area**	*2000*	*2050*	*(thousands)*	*(per cent)*	*2000*	*2050*	*(per cent)*
Austria	8 211	7 094	-1 117	-14	15	30	106
Belarus	10 236	8 330	-1 907	-19	14	25	86
Belgium	10 161	8 918	-1 243	-12	17	28	65
Bosnia and Herzegovina	3 972	3 767	-205	-5	10	27	171
Bulgaria	8 225	5 673	-2 552	-31	16	30	88
China, Hong Kong SAR[a]	6 927	6 664	-263	-4	11	33	217
Croatia	4 473	3 673	-800	-18	15	26	77
Cuba	11 201	11 095	-105	-1	10	27	176
Czech Republic	10 244	7 829	-2 415	-24	14	33	144
Denmark	5 293	4 793	-500	-9	15	24	59
Estonia	1 396	927	-469	-34	14	29	107
Finland	5 176	4 898	-278	-5	15	26	72
Germany	82 220	73 303	-8 917	-11	16	28	73
Greece	10 645	8 233	-2 412	-23	18	34	92
Hungary	10 036	7 488	-2 548	-25	15	28	92
Italy	57 298	41 197	-16 101	-28	18	35	92
Japan	126 714	104 921	-21 793	-17	17	32	86
Latvia	2 357	1 628	-728	-31	14	27	86
Lithuania	3 670	2 967	-704	-19	13	27	102
Luxembourg	431	430	-1	0	14	27	84
Netherlands	15 786	14 156	-1 629	-10	14	28	104
Poland	38 765	36 256	-2 509	-6	12	26	118
Portugal	9 875	8 137	-1 738	-18	16	31	99
Romania	22 327	16 419	-5 908	-26	13	31	131
Russian Federation	146 934	121 256	-25 678	-17	13	25	100
Slovakia	5 387	4 836	-551	-10	11	27	139
Slovenia	1 986	1 487	-499	-25	14	32	131
Spain	39 630	30 226	-9 404	-24	17	37	117
Sweden	8 910	8 661	-249	-3	17	27	53
Switzerland	7 386	6 745	-641	-9	15	30	104
Ukraine	50 456	39 302	-11 154	-22	14	27	91
United Kingdom	58 830	56 667	-2 163	-4	16	25	56
Yugoslavia	10 640	10 548	-92	-1	13	23	73

Source: United Nations Population Division, *World Population Prospects: The 1998 Revision*.
[a]As of 1 July 1997, Hong Kong became a Special Administrative Region (SAR) of China.
*Countries or areas with 150,000 persons or more in 1995.

From the demographic point of view, there is little doubt that the most likely course of events for those countries will result in smaller and older populations. To the extent that persons of working age (15 to 64 years) can be seen as supporting the older population (65years or older), the ratio between the two (i.e., the "potential support ratio" or PSR) will decline dramatically. However, it is useful to ask a number of "what if" questions. What would happen, for example, if fertility, mortality and migration changed course? Or more specifically *how much* would they have to change course in order to reverse the most likely demographic outcomes?

Fertility is presently at record low levels in many countries where total fertility rates (TFR) as low as 1.2 children per woman have been recorded in recent years – well below the level of 2.1 children per

woman that would ensure the replacement of the parents' generation. Although fertility may rebound in the coming decades, few believe that fertility in most countries will recover sufficiently to reach the replacement level in the foreseeable future.

Table I.2 below shows the range of values that the potential support ratio might take in 2050 for the eight selected countries and two selected regions, according to the three variants (low, medium and high) of the standard population projections prepared by the United Nations Population Division. These variants correspond essentially to alternative assumptions about the course of fertility. For ease of comparison, the values of the PSR in 1995 are also shown. In France, for instance, the most likely course of events (medium variant) leads to a decline of the PSR from 4.36 to 2.26 - in other words, a halving of the number of working age persons per older person. In case fertility rises to what appears at this point to be the highest plausible level in the context of France (a TFR of 2.36 children per woman in 2040-2050), the PSR would somewhat improve in relation to the medium variant, but it would still be nearly halved. If, on the other hand, fertility stabilizes at a TFR of 1.58 after 2005 - which at this point appears to be the lowest plausible level - the PSR would decline even more drastically, to less than two persons in the working age group per older person.

Thus, while the range of outcomes of alternative fertility levels in terms of the PSR by 2050 would be significant (1.95 against 2.52) the difference is relatively small in relation to the level from which the PSR will be dropping (4.36). Moreover, the impact of alternative fertility levels would not be felt until the later part of the period. While in the long run fertility levels will be the determinant factor in shaping the age structure of the population, plausible ranges of increases in fertility rates in the next decades would only contribute at best marginally to slow the process of population aging by 2050. In the short to medium term - say over the next 20 years or so - measures to shore up fertility levels would not have any impact on the PSR.

With regard to mortality, its reduction will continue to be an overriding policy goal, so action in this area would by design further the population ageing process. Longevity is in any case projected to increase, even in absence of possible new medical breakthroughs.

Therefore, among the demographic variables, only international migration could be instrumental in addressing population decline and population ageing in the short to medium term. As noted above, the most likely changes in fertility and mortality rates for Europe and Japan are unlikely to counter population decline and population ageing over the next half century.

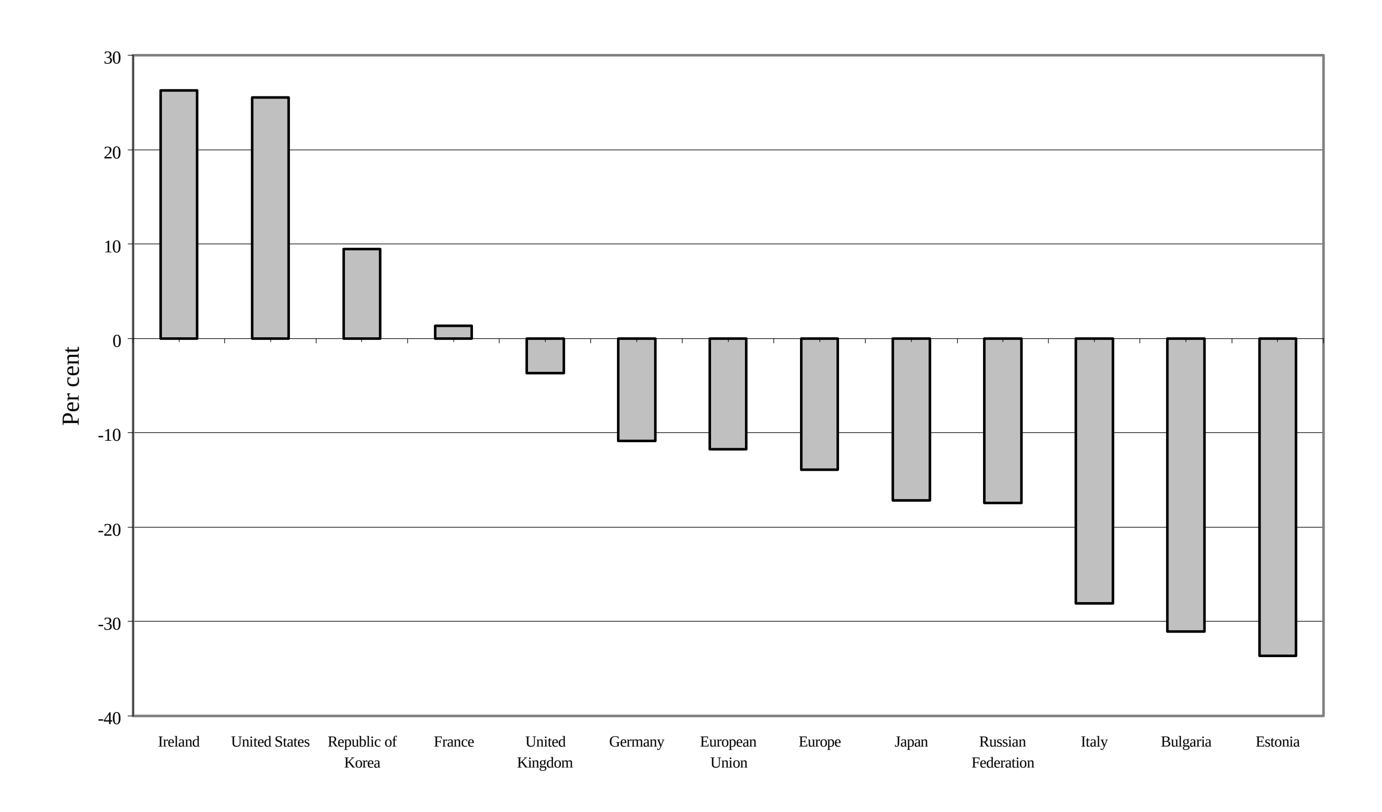
TABLE I.2. VALUES OF THE POTENTIAL SUPPORT RATIO (PSR) BY PROJECTION VARIANT

		PSR in 2050 by projection variant		
Country or region	*PSR in 1995*	*Low*	*Medium*	*High*
France	4.36	1.95	2.26	2.52
Germany	4.41	1.81	2.05	2.35
Italy	4.08	1.35	1.52	1.75
Japan	4.77	1.47	1.71	1.91
Republic of Korea	12.62	2.04	2.40	2.70
Russian Federation	5.62	2.05	2.43	3.04
United Kingdom	4.09	2.02	2.37	2.75
United States	5.21	2.43	2.82	3.26
Europe	4.81	1.84	2.10	2.51
European Union	4.31	1.72	1.96	2.26

Source: United Nations Population Division, *World Population Prospects: The 1998 Revision*.

The prospects of population decline and population ageing during the coming decades, and particularly the rapid and extensive reduction of the potential support ratio in many countries raise a number of crucial issues in the areas of employment, economic growth, health care services, pensions and social support services. Moreover, while most developed countries will experience population decline, a few will not. Differentials in population growth, as illustrated in figure I.1, will in some cases result in dramatic repositioning of countries and regions according to their relative population size. While these issues fall outside the scope of the present study, it is clear, however, that current demographic realities and expected future population changes, and their likely far-reaching consequences will force reassessments of many established economic, social and political policies and programmes, including those relating to international migration.

Figure I.1. Per cent change in total population for selected countries and regions, 2000-2050



Source: United Nations Population Division, *World Population Prospects: The 1998 Revision*.

II. LITERATURE REVIEW

Population ageing is an inevitable outcome of the demographic transition. Due primarily to declines of fertility, and secondarily to mortality declines, the age structure of a population becomes older, with a growing number and proportion of elderly persons. While many countries, especially those in the more developed regions, have experienced such a demographic process for some time, there is great variation among them in terms of the level and pace of population ageing. In recent years, the issue of population ageing has received renewed attention in developed countries, because of the continuance of fertility below the replacement level and on-going trends towards lower mortality. Thus, the trends of population ageing are expected to increase further in these countries and their populations are projected to level off and decline in the foreseeable future. These changes have profound consequences and far-reaching implications, especially for pension schemes, heath-care systems and the economic vitality and growth of a country.

The future population size and age-sex structure of any country depends basically on the three demographic components: fertility, mortality and international migration. As no policies to increase the mortality of a population are socially acceptable, there are, in theory, two possible ways of retarding or reversing demographic ageing. First, a reversal of declines of fertility would lead the age structure of the population back towards a younger one, thus slowing down the ageing process. However, the recent experience of low-fertility countries suggests that there is no reason to assume that their fertility will return anytime soon to the above-replacement level (United Nations, 1997).

Hence, as a second option, the potential role that international migration could play in offsetting population decline and population ageing has been considered. Given the possibility of attracting larger number of immigrants into economically affluent developed countries, virtually all of which are experiencing low fertility, it appears appropriate to consider the impact that international migration may have on the demographic challenges of ageing. The Organisation for Economic Cooperation and Development (OECD) commissioned research on these issues and published in 1991 a special report on the demographic impact of migration (OECD, 1991).

A number of studies have examined the demographic impact of a constant influx of migrants on the growth of a population with below replacement fertility. For example, taking the twelve countries in Europe or members of then the European Community (EC) together, Lesthaeghe and others (1988) carried out population projections. With the present below-replacement fertility and with no further immigration, the total population of these European countries would be reduced by approximately 20 to 25 per cent by the year 2050. The calculations showed that an overall population decline during the first half of the twenty-first century can be avoided, if about one million immigrants move into the area every year. More recently, Ulrich (1998), in his study on Germany applied different fertility assumptions for natives and foreigners and different immigration levels by group of immigrants, and estimated the population size of Germany and its structure in 2030. His projections showed that, even with a relatively high level of immigration, the population of the country would start falling in the near future. Therefore, he concluded that immigration can only slow an inevitable decline of the population of Germany. Wanner (2000), in his study of Switzerland, showed that the total population of the country, which was projected to be slightly below 7 million in 2050, would be 5.6 million in the absence of future migration.

The importance of immigration for the growth of population in traditional countries of immigration is relatively well recognized (Appleyard, 1991; Foot, 1991; United Nations, 1998a).

However, the current level of immigration may not be sufficient for these countries to prevent their population size from declining in the future. Espenshade (1986) projected the changes of the population of the United States, assuming both the fertility and mortality rates remain constant at their 1980 level and the number of immigrants remains at the level in 1983 with the same age and sex structure. According to these assumptions, the population in the United States would grow until 2025, but decline thereafter. In a similar exercise for Canada it was found that in order to avoid population decline, a volume of immigratioin exceeding the current annual quota would be necessary after 2050, under the assumption that the current fertility level will be maintained (Wattelar and Roumans, 1991).

Many of these studies demonstrate that long-lasting below-replacement fertility and immigration streams offsetting the negative natural growth of the national population would eventually lead to a significant increase in the foreign population and therefore a marked change in the composition of a host country (Espenshade 1986; Ulrich, 1998).

As the age structure of immigrants is often younger than that of the host population, there is a popular belief that a large influx of immigrants makes the population of the host country significantly younger. Accordingly, it is commonly believed that a more generous immigration policy can immediately increase the number in the working-age population and help reduce markedly the dependency costs of the elderly. However, the analyses of migration flows of recent decades in developed countries provided scant evidence to support these conclusions. For instance, the study of the migration to and from the United Kingdom by Coleman (1995) revealed that after World War II immigration neutralized the previously dominant pattern of emigration. Thus, without New Commonwealth immigration and the contribution of births from immigrants, the population of the country would have been smaller by 3 million than it was in the early 1990s. He asserts, however, that the cumulative effects of migration alone on the age structure of the country have been limited, because the age structures of immigrant and emigrant flows are similar and the level of migration is relatively small in relation to natural change. Similarly, Le Bras (1991) explored the demographic consequences of the migration flows since the end of the Second World War in seven developed countries, namely Australia, Belgium, Canada, France, Germany, Italy and Sweden. He also concluded that the “rejuvenating”effect of migration on the host populations had been fairly modest. Immigration had lowered the average age of the population in these seven countries by 0.4 to 1.4 years.

A number of other studies analyzed the effects of the steady influx of migration on the future age structure of a host population. For instance, Lesthaeghe and others (1988) projected the age structure of the total population of the twelve European countries with and without migration up to the year 2060. Their calculations show that the overall ageing trend in Europe can be attenuated through immigration, but it cannot be prevented. Assuming that the total fertility of nationals remains constant at 1.6 and that of non-nationals falls to the replacement level by 2010, the proportion aged 65 years or older among females would rise from 16.3 per cent in 1985 to 25.8 per cent in 2060 in the absence of migration. The proportion was projected to be 21.3 per cent in 2060, if an additional 400,000 female immigrants would arrive every year, other things being equal.

Research for the United States also indicates that immigration is not a realistic solution to demographic ageing (Coale, 1986; Espenshade, 1994; Day, 1996). Assuming that immigrants adopt the low fertility of a host population, Coale (1986) compared the age structure of the United States population in 2100 with and without a net immigration of 700,000 per year. He illustrated that the difference in projected age distributions of the two populations is fairly modest, regardless of four different levels of below-replacement fertility scenarios. Similar results were presented a decade later by Day (1996). According to her projections, should fertility and mortality follow the middle-series assumption and net migration be held at 820,000 per year or near the current level, the proportion aged 65 years or older in the United States would increase from 12.8 per cent in 1990 to 20.0 per cent in 2050. Even if a fairly

larger level of immigration (1.4 million per year) occurs, it would reduce the future percentage of elderly in the population only slightly (to 19.4 per cent). Espenshade (1994) confirmed the finding that immigration has relatively little effect on overall age composition of the population of the United States, because previous years' immigrants also age along with the rest of the population.

Concerns about an ageing society often arise not only from the growing number and proportion of elderly, but also from the rapidly changing ratio of the working-age population to the retired population. In particular, the sharp drop of the ratio may directly affect the viability of pension systems. In the study cited earlier, Lesthaeghe and others (1988) computed the ratio of adult women (20-59 years) to elderly women (60 years or older) for the total population of the twelve European countries under five different scenarios. If the countries keep their current below-replacement fertility, the ratio would decline from 2.4 in 1985 to 1.5 in 2060. Immigration of 400,000 women per year from 1985 onwards would be of some help to alleviate the decline, but still yield a ratio of 1.8 in 2060. In his study cited earlier, Wanner (2000) showed that in Switzerland, the ratio of the population aged 20 to 64 years to the population aged 65 years or older would be 1.5 in 2050 in the absence of migration, as compared to 2.1 which is currently projected.

Instead of assuming a fixed number of immigrants arriving and examining the consequences of this immigration on the age structure of a population, some researchers estimated the level of migration necessary to keep constant the ratio of the adult population to the elderly. Both studies by Blanchet (1988) on France and by Wattelar and Roumans (1991) on Austria, Belgium, Canada and Spain demonstrated, however, that initial structural irregularities of the population would inevitably cause sudden changes in future age pyramids. For this reason, the scenario that aims to keep constant the ratio of adults to elderly may lead to explosive cycles of immigration peaks to make up for the shortfalls of population. Furthermore, such massive inflows of migrants are likely to bring about a phenomenal increase in the population of a country, as immigrant themselves would become older and call for further immigration of younger population (Wattelar and Roumans, 1991).

In sum, although there is a considerable variation in terms of the choice of the base year, the period of projection, the fertility scenarios adopted for nationals and non-nationals, and the migration assumptions, available research studies reach several conclusions. First, inflows of migrants will not be able to prevent population declines in the future, nor rejuvenate a national population, unless the migration streams reach comparatively high levels. Second, international migration can only act as a partial means to offset the effects of population ageing arising from below-replacement fertility. The inadequacy of migration to serve as a counter for population ageing, and in most cases for population decline, has been further consolidated by questions regarding the feasibility of formulating and adopting suitable migration policies (Watteler and Roumans, 1991; Espenshade, 1994; McDonald and Kippen, 1999). In many countries, additional large volumes of immigrants are likely to face serious social and political objections, even as a means of slowing population decline and population ageing. Therefore, regulating the level and composition of replacement migration streams to reach a desired population size or population age structure poses enormous challenges for Governments that may wish to do so.

III. THE APPROACH: METHODOLOGY AND ASSUMPTIONS

As part of its regular work programme, the Population Division biennially prepares population estimates and projections for all countries of the world, with estimates for the period from 1950 to 1995, and with four projection variants for the period 1995 to 2050. The last such revision is published in *World Population Prospects: The 1998 Revision* (United Nations, 1999a, 1999b and 1999c).

The four projection variants in the *1998 Revision*, i.e., high, medium, low and constant, are prepared for countries and areas using the cohort-component method. The different variants are based on different assumptions about the future course of fertility. All variants incorporate the same assumptions about the future course of mortality and, for most countries, the assumptions about future international migration trends are also the same for all four variants.

The high, medium and low variants constitute the core of the official estimates and projections of the United Nations. They are meant to encompass the likely future path of population growth for each country and area of the world. The high and low variants provide upper and lower bounds for that growth. The medium variant is a useful central reference for trends over the longer-term future. The constant variant projects the population of each country by maintaining fertility constant at the level estimated for 1990-1995. The results of this variant are meant to be used for illustrative purposes and are not considered to represent a likely future path for any country or area.

Building upon the medium variant of the *1998 Revision*, the replacement migration study considers five different scenarios with regard to migration streams needed to achieve particular population objectives or outcomes. The five scenarios for the above-mentioned ten countries and regions are:

Scenario I. The medium variant of the *1998 Revision*.

Scenario II. The medium variant of the *1998 Revision*, amended by assuming zero migration after 1995.

Scenario III. This scenario computes and assumes the migration required to maintain the size of the total population at the highest level it would reach in the absence of migration after 1995.

Scenario IV. This scenario computes and assumes the migration required to maintain the size of the working-age population (15 to 64 years) at the highest level it would reach in the absence of migration after 1995.

Scenario V. This scenario computes and assumes the migration required to maintain the ratio of the working-age population to the retired-age population (population 15-64 years divided by population 65 or older) at the highest level it would reach in the absence of migration after 1995.

The study examines the situation for eight countries, namely: France, Germany, Italy, Japan, Republic of Korea, Russian Federation, United Kingdom and United States. In addition, computations are also done for Europe and for the European Union, treating them as if they were each a single country from 1995 on. The time period covered is roughly a half a century, i.e., from 1995 to 2050.

All the data pertaining to the eight countries and two regions mentioned above for the period 1950 to 1995 come from the estimates in the *1998 Revision*. For the period 1995 to 2050, projections are carried out using the cohort-component method, taking as a base the 1995 population by sex and five-year age groups and applying the age-specific fertility and mortality rates assumed in the medium variant of the *1998 Revision*.

More specifically, the number of survivors in each age and sex category at the end of each five-year period is calculated by applying to the base-year population age- and sex-specific survival rates which are derived from an observed or estimated national life-table, using the United Nations model for future mortality improvement. The number of births expected to take place during each five-year period is derived by applying the estimated age-specific fertility rate, which is obtained from the national fertility pattern and assumed future fertility trend, to the average number of women in the age-group. The births are distributed by sex on the basis of the estimated sex ratio at birth. The assumed net number of international migrants, classified by age and sex, is incorporated into the calculations.

The detailed past results and future assumptions of the *1998 Revision* for each of the countries and regions examined in this study are presented in the annex tables. A detailed description of the methodology used for the estimates and projections may be found in *World Population Prospects: The 1998 Revision, volume III* (United Nations, 1999c).

The future population trends according to the medium variant are mainly determined by the assumed future course of fertility. For each of the countries and regions considered in this study, the total fertility rate is below replacement level, i.e., below 2.1 children per woman. For those countries whose latest estimated total fertility rate was between 1.5 and 2.1 children per woman (France, Republic of Korea, United Kingdom, and the United States,), it is assumed that the fertility rate will move toward a target level of 1.9 children per woman and will remain constant to the end of the projection period, i.e., 2050. For those countries and regions whose latest estimated total fertility rate was less than 1.5 children per woman (Germany, Italy, Japan, Russian Federation, Europe and European Union), the fertility rate is expected to rise to a target level of 1.7 children per woman and remain constant thereafter. It should also be noted that the target total fertility rate was modified when there was information on the completed fertility of the cohort of women born in 1962. In those cases (France, Germany, Italy, Japan, Europe and European Union), the target level is set as the average of either 1.9 or 1.7 and the estimated completed fertility of the 1962 cohort. In general, recorded post-1995 trends in fertility were assumed to continue until the year 2000, and then stabilize at the 2000 level until 2005. After 2005, fertility was assumed to move toward the target level at a pace of 0.07 children per woman per quinquennium.

Scenario I, which is the medium variant of the *1998 Revision*, already has migration assumptions for the period 1995-2050. In each of the other four scenarios the net total number of migrants during each five-year period is computed so that the projected results meet the particular requirements of the scenario.

Scenario II assumes that the total net number of migrants is zero for each five year period. Scenario III involves computing the total net number of migrants for each five-year period needed to maintain the size of the total at the highest level it would reach in the absence of migration after 1995. Scenario IV determines the total net number of migrants for each five-year period required to maintain the size of the working age population (15-64 years) at the highest level it would reach in the absence of migration after 1995. Finally, scenario V computes the total net number of migrants required to maintain the ratio of the working age population to the retired age population, that is those 15-64 years old divided by those 65 years or older) at the highest level it would reach in the absence of migration after 1995.

Another critical assumption concerns the age and sex distribution of the total net number of migrants. The age and sex structure of the migrants is assumed to be the same for all countries. This

assumption, while unlikely, permits comparisons among the countries and regions. It is assumed that the structure of the migration streams is the average age and sex structure of migrants into the United States, Canada and Australia. These three countries were selected because they are the three major traditional countries of immigration.

The age structures of the three countries and their average, or model pattern for this study, are shown for males and females in figures III.1 and III.2, respectively. The per cent distribution by age and sex of the immigrants in the model pattern, which are used in the scenarios, is shown in table III.1 and illustrated as an age-sex pyramid in figure III.3.

The projection methodology also assumes that, after the immigrants arrive in a country, they experience the average fertility and mortality conditions of that country. While this is typically not the case, especially when immigrants come from a country that differs greatly demographically from the receiving country, this assumption permits computations to be more straightforward and also facilitates comparisons between countries and regions.

Figure III.1. Per cent distribution of male immigrants by age in Australia, Canada, United States of America and model pattern

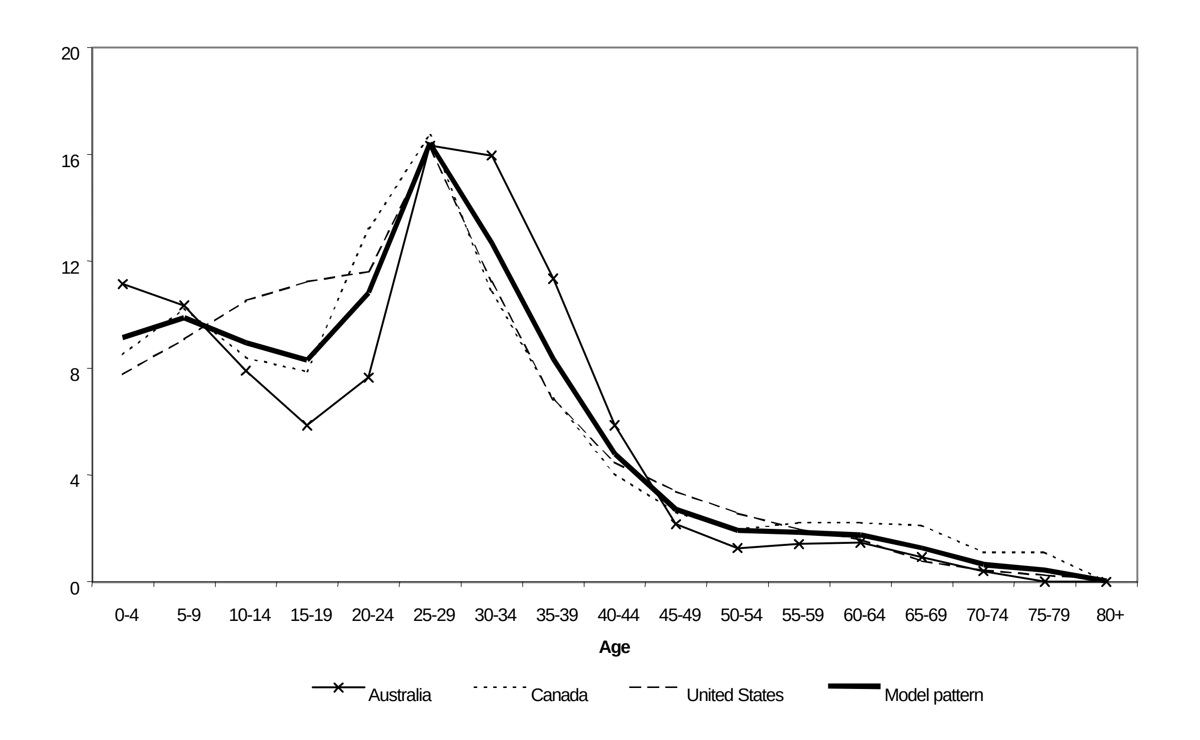
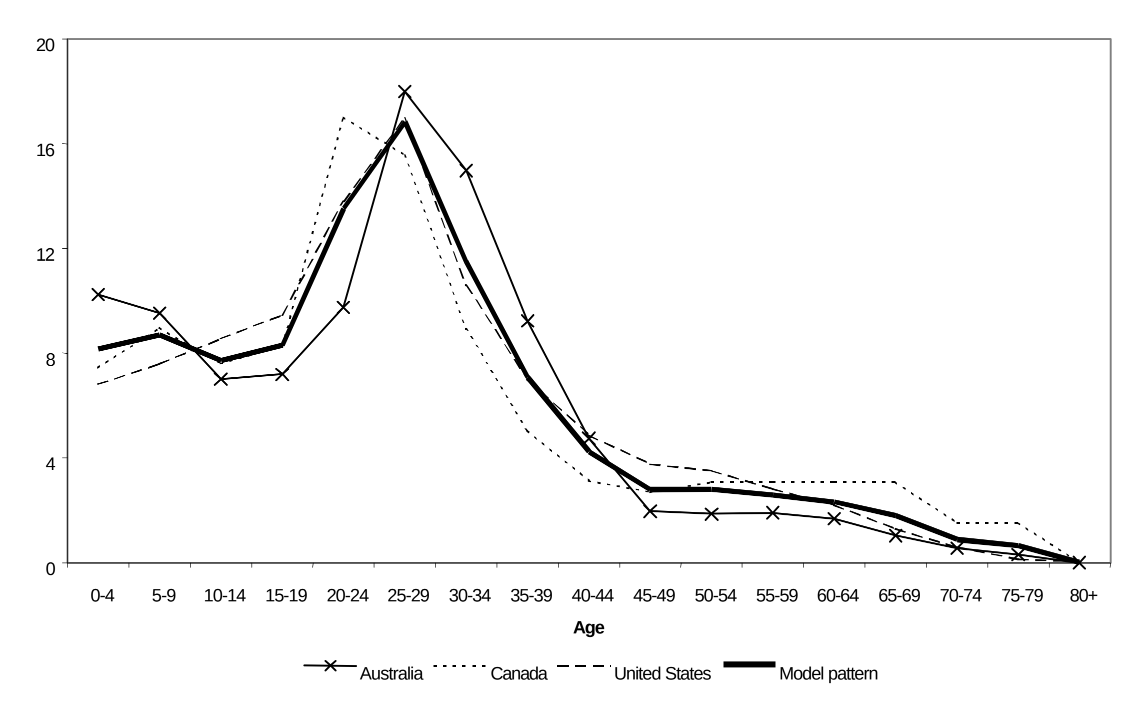


Figure III.2. Per cent distribution of female immigrants by age in Australia, Canada, United States of America and model pattern

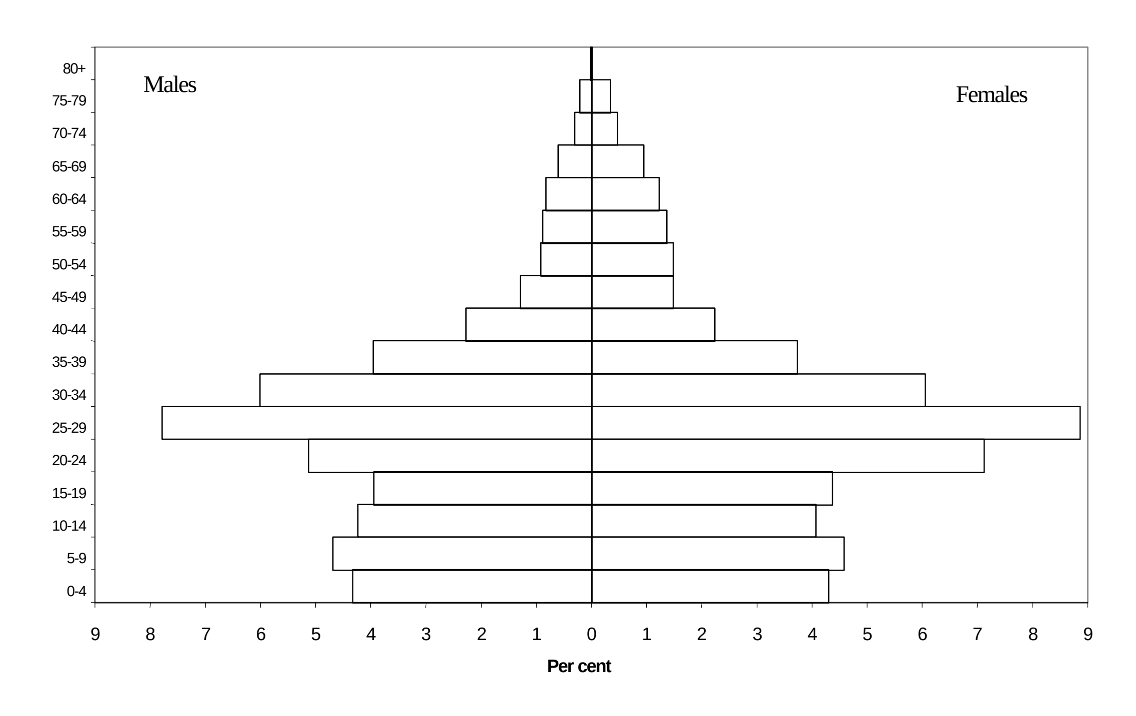


NOTE: The model pattern is the average of the three countries.

TABLE III.1. PER CENT DISTRIBUTION OF NET NUMBER OF MIGRANTS BY AGE AND SEX, MODEL PATTERN

Age groups	*Males*	*Females*	*Both sexes*
0-4	4.33	4.29	8.63
5-9	4.69	4.58	9.26
10-14	4.24	4.06	8.30
15-19	3.94	4.37	8.31
20-24	5.13	7.12	12.25
25-29	7.79	8.86	16.65
30-34	6.01	6.05	12.06
35-39	3.95	3.73	7.68
40-44	2.27	2.24	4.51
45-49	1.28	1.47	2.76
50-54	0.91	1.48	2.40
55-59	0.88	1.37	2.25
60-64	0.83	1.22	2.05
65-69	0.60	0.95	1.55
70-74	0.30	0.47	0.77
75-79	0.21	0.34	0.56
80+	0.01	0.01	0.02
Total	47.40	52.60	100.00

Figure III.3. Age-sex pyramid of immigrants, model pattern



IV. RESULTS

A. OVERVIEW

Past trends

At the middle of the 20th century, the average fertility level stood at 2.6 children per woman in Europe, and 2.4 children for the countries of the European Union (see table IV.1). For the countries in this study the range was from 2.2 children per woman in Germany and the United Kingdom, to 2.7 children in France and in Japan. Fertility was markedly higher in the United States, 3.4 children, and even higher in the Republic of Korea, 5.4 children per woman. By 1965-1970, fertility had increased a little on average for the countries of the European Union, to 2.5 children per woman, but had fallen below replacement level in the Russian Federation and in Japan, at 2.0 children, and had also decreased in the United States, to 2.5 children and more slowly in the Republic of Korea, to 4.7 children. By 1995-2000, fertility was below replacement level in all countries and regions of the study, with a relatively wide range of levels, from a high of 2.0 children in the United States to 1.2 children in Italy. The average for Europe and for the European Union was 1.4 children per woman.

As a consequence of this low, and decreasing, fertility history, coupled with a continuous decline of mortality, all populations aged rapidly. The potential support ratio (PSR), which is defined as the ratio of the population aged 15-64 years to the population aged 65 years or older, ranged between 6 and 8 in 1950 for the European Union countries, the United States and for Europe, and was 10 in the Russian Federation, 12 in Japan and 18 in the Republic of Korea. By 2000, the PSR had decreased by about 40 per cent, to 4 in the countries of the European Union and in Japan, 5 in the United States, the Russian Federation and Europe, and 11 in the Republic of Korea.

Scenario I

According to scenario I, the medium variant of the *1998 Revision,* the eight countries and two regions considered in this study would have below-replacement fertility levels until 2050 (see table IV.1). As a result, all of them, with the exception of the United States, would see their total population start declining before 2050. The population of Europe, for example, would be 101 million less (14 per cent) in 2050 than in 2000. The population of the European Union would be 44 million less in 2050 than in 2000, a 12 per cent reduction. Italy would see the largest relative loss, 28 per cent, followed by Japan, 17 per cent. The population of the United States would keep increasing significantly because its fertility does not fall far below replacement and substantial immigration is assumed to continue into the future. (The results of the *1998 Revision* are shown in the annex tables.)

All populations would continue to age rapidly. The PSR of the European Union and that of Europe would decrease by more than half between 2000 and 2050, from 4.1 to 2.0 and from 4.6 to 2.1, respectively. The largest decline, however, would be in the Republic of Korea, where the PSR would fall from 10.7 persons in the age-group 15-64 years per one person aged 65 or older, to 2.4.

Scenario II

Scenario II is the medium variant of the *1998 Revision* in which no migration is assumed after 1995. It serves mostly as a backdrop, in order to measure, by comparison, the effects of the migrations assumed in the other scenarios. The European Union would lose 62 million people (17 per cent) between 2000 and 2050, and Europe would lose 123 million people (17 per cent) (see table IV.2). Because the migration streams assumed in scenario I are not very large, the results of scenario II are not substantially

different from those of scenario I. The exception is the United States, where large flows of migration were assumed in scenario I. In scenario II the population of the United States would also start decreasing before 2050, and the increase between 2000 and 2050 would be 16 million (6 per cent), instead of 71 million as in scenario I. The only other countries in the group being studied where the population would be higher in 2050 than in 2000 are the Republic of Korea (10 per cent higher) and France (1 per cent higher).

In all countries and regions, the population aged 15-64 years would decline earlier and faster than the total population. For example, while the European Union would see its total population decline by 17 per cent between 2000 and 2050, the population aged 15-64 would decline by 30 per cent.

The proportion of the population aged 65 years or older would continue to increase rapidly, and, in 2050, would reach 30 per cent for the European Union and 28 per cent for Europe. The highest proportion aged 65 years or older in 2050 would be in Italy (35 per cent) and in Germany and Japan (32 per cent), and the lowest in the United States (23 per cent), with the Russian Federation, the Republic of Korea and the United Kingdom at 25 per cent, and France at 26 per cent. The potential support ratio would decrease rapidly for all countries and regions, reaching 1.9 for the European Union and 2.0 for Europe in 2050 (see table IV.3). The lowest level for the PSR in 2050, 1.5, would be in Italy, and the highest, 2.6, in the United States.

Scenario III

In the absence of migration after 1995, all countries and the two regions would see their populations start declining before 2050. Scenario III keeps the size of the total population at the maximum level it would reach in the absence of migration. The dates at which this maximum will be reached differ by country. The earliest is 1995 for Germany, Italy, the Russian Federation and Europe, and 2000 for the European Union. The latest is 2035 for the Republic of Korea and 2030 for the United States. The total number of migrants needed to keep the total population constant at its maximum size until 2050, would be 47 million for the European Union and 100 million for Europe (see table IV.4). It would be 28 million in the Russian Federation, 18 million in Germany and 17 million in Japan, but only 1.5 million in France and in the Republic of Korea. In 2050 the proportion of the total population which would be made up of post-1995 immigrants and their descendants would range from 2 per cent in the United States and 3 per cent in France and in the Republic of Korea, to 28 per cent in Germany and 29 per cent in Italy. The potential support ratios in 2050 would be a little higher than in scenario II, and range from 2.0 in Italy and 2.1 in Japan to 2.6 in the United States and 2.9 in the Russian Federation (see table IV.5).

Scenario IV

Scenario IV keeps the size of the population aged 15-64 years at the maximum level it would reach in the absence of migration. The dates at which this maximum will be reached differ by country. They range from 1995 for the European Union, Germany, Italy and Japan, 2000 for the Russian Federation and 2005 for Europe, to 2010 for France and for the United Kingdom, 2015 for the United States and 2020 for the Republic of Korea. The total number of migrants needed to keep the population aged 15-64 constant until 2050 would be larger than in scenario III. The number that would be needed under scenario IV is 80 million for the European Union and 161 million for Europe (see table IV.4). The numbers range from 5 million in France and 6 million in the Republic of Korea and the United Kingdom, to 25 million in Germany and 33 million in Japan. However, when the number of migrants are related to population size in the year 2000, it is Italy and Germany which need the largest number of migrants over the period to 2050, respectively 6,500 and 6,000 annually per million inhabitants (see table IV.6 and figure IV.1). Among the countries studied, the United States needs the smallest number, approximately 1,300 per million inhabitants. In 2050 the proportion of the total population which would be made up of post-1995 immigrants and their descendants would range from 8 per cent in the United States and 12 per

cent in France, to 36 per cent in Germany and 39 per cent in Italy (see table IV.7). The potential support ratios would range from 2.2 in Italy and in Japan, to 2.8 in the Republic of Korea and 3.1 in the Russian Federation.

Scenario V

Scenario V keeps the potential support ratio at its 1995 level, which was 4.3 for the European Union and 4.8 for Europe, and ranged from 4.1 in Italy and in the United Kingdom to 5.6 in the Russian Federation and 12.6 in the Republic of Korea. The total number of migrants needed to keep the potential support ratio constant until 2050 is extremely large in all countries (see table IV.4). It is 700 million for the European Union and nearly 1.4 billion for Europe. It ranges from 60 million in the United Kingdom and 94 million in France to more than half a billion in Japan and in the United States, and 5 billion in the Republic of Korea. In 2050, the proportion of the population that would be post-1995 migrants or their descendants would range from 59 per cent in the United Kingdom to 99 per cent in the Republic of Korea.

Discussion

In the absence of migration all eight countries and the two regions with fertility below replacement will see their total population start declining before 2050 and their populations in the working-age group 15-64 years will decline even faster. Their populations will also age very rapidly. However many, if not most of them, have had immigrants in the recent past, and can be expected to have immigrants in the future also. Table IV.8 shows the annual net numbers of migrants for the period 1990 to 1998.

During the period 1990 to 1994, for example, the European Union received an average of a little over a million net immigrants per year, and a little over 600,000 per year during 1995 to 1998. These numbers are quite close to the numbers of migrants that the European Union would need to receive to prevent its total population from declining: 612, 000 per year between 2000 and 2025 and 1.3 million per year between 2025 and 2050. However, the annual numbers of immigrants who would be needed to prevent the population in working-age from declining are about double the numbers received in the last decade.

While the situation varies from country to country, it is somewhat similar in many of the countries with past experience with immigration. In France, Germany and the United Kingdom, the numbers of immigrants needed to keep constant the total population or the working-age population vary irregularly through time because of specific age-structures. They are comparable to, or at most double, the numbers of immigrants received during the past decade. In the United States, the annual numbers of immigrants needed for both purposes are smaller than past immigration. In addition, the proportion in 2050 of the post-1995 migrants and their descendants in the total population (see table IV.7), in scenarios III and IV, is less than or equal to the proportion of migrants in the total population in 1990 in France (10.4 per cent) and in the United States (7.9 per cent). In Germany and in Italy, however, scenario III would result in about 30 per cent, and scenario IV about 40 per cent, of post-1995 migrants and their descendants in the 2050 population, which is much more than the current situation (see table IV.9).

In scenarios III and IV, in all countries and regions, the potential support ratio would be much lower in 2050 than its 1995 level, and in some cases the decline in the PSR is substantial.

The annual numbers of immigrants needed to keep the potential support ratios constant at their 1995 levels (scenario V) are vastly larger, in every country, than any past experience (see figure IV.2). Scenario V would furthermore result in having between 59 per cent and 99 per cent of the population of all countries in 2050 composed of post-1995 migrants and their descendants.

In the absence of migration (scenario II), the figures show that the ratios between population in working-age and population past working-age would remain in 2050 at their 1995 levels if, by 2050, the upper limits of the working-age span were increased from 65 years to about 72 years in the United Kingdom, 73 years in the Russian Federation, 74 years in France and in the United States, 77 years in Germany, Italy and Japan, and 82 years in the Republic of Korea (see table IV.10).

The European Union and the United States - the world’s two largest economic blocks, often in competition which each other - are projected to follow starkly contrasting demographic paths in the coming decades: while the population of the United States would increase by 82 million between 1995 and 2050, that of the European Union would decline by 41 million (see table IV.11). As a result, the population of the United States, which in 1995 was 105 million smaller than that of European Union, will become larger by 18 million in 2050. The same trends will characterize their working-age populations: while the number of people aged 15-65 years will decline by 61 million in the European Union, in the United States it will increase by 39 million. By 2050, the working age population of the United States will outnumber that of the European Union by 26 million, while in 1995 it was outnumbered by 75 million. Therefore, although the elderly population would increase more and faster in the United States than in the European Union, the potential support ratio will continue to be less favourable in the European Union compared to the United States – in 2050 it would stand at 2.0 persons of working-age per elderly person in the case of the European Union, against 2.8 in the United States.

TABLE IV.1. TOTAL FERTILITY RATES, 1950 TO 2050, BY COUNTRY OR REGION
(*Number of children per woman*)

	Period				
Country or region	*1950-1955*	*1965-1970*	*1995-2000*	*2020-2025*	*2045-2050*
France	2.73	2.61	1.71	1.96	1.96
Germany	2.16	2.32	1.30	1.58	1.64
Italy	2.32	2.49	1.20	1.47	1.66
Japan	2.75	2.00	1.43	1.73	1.75
Republic of Korea	5.40	4.71	1.65	1.90	1.90
Russian Federation	2.51	2.02	1.35	1.70	1.70
United Kingdom	2.18	2.52	1.72	1.90	1.90
United States	3.45	2.55	1.99	1.90	1.90
Europe	2.56	2.35	1.42	1.67	1.78
European Union	2.39	2.52	1.44	1.45	1.80

Source: United Nations Population Division, *World Population Prospects: The 1998 Revision*.

TABLE IV.2. TOTAL POPULATION (ZERO MIGRATION AFTER 1995), 1950 TO 2050, BY COUNTRY OR REGION
(*Thousands*)

	Year				
Country or region	*1950*	*1975*	*2000*	*2025*	*2050*
France	41 289	52 699	58 879	61 121	59 357
Germany	68 376	78 679	80 985	72 643	58 812
Italy	47 104	55 441	56 950	50 679	40 722
Japan	83 625	111 524	126 714	121 150	104 921
Republic of Korea	20 357	35 281	46 946	53 020	51 751
Russian Federation	102 192	134 233	144 960	131 824	114 248
United Kingdom	50 616	56 226	58 600	58 768	55 594
United States	157 813	220 165	274 335	296 616	290 643
Europe	547 318	676 390	723 482	684 055	600 464
European Union	296 151	349 313	372 440	354 500	310 839

TABLE IV.3. POTENTIAL SUPPORT RATIO (ZERO MIGRATION AFTER 1995), 1950 TO 2050, BY COUNTRY OR REGION
(*Number of persons aged 15-64 per person aged 65 or older*)

	Year				
Country or region	*1950*	*1975*	*2000*	*2025*	*2050*
France	5.79	4.65	4.10	2.82	2.26
Germany	6.90	4.29	4.11	2.45	1.75
Italy	7.92	5.29	3.72	2.40	1.52
Japan	12.06	8.60	3.99	2.24	1.71
Republic of Korea	18.16	16.25	10.67	4.43	2.40
Russian Federation	10.49	7.66	5.51	3.63	2.41
United Kingdom	6.24	4.50	4.08	2.93	2.36
United States	7.83	6.15	5.21	3.09	2.57
Europe	7.99	5.67	4.65	3.03	2.04
European Union	6.97	4.84	4.06	2.66	1.89

TABLE IV.4. NET NUMBER OF MIGRANTS, 1995-2050, BY SCENARIO AND COUNTRY OR REGION
(*Thousands*)

Scenario	*I*	*II*	*III*	*IV*	*V*
Country or region	*Medium variant*	*Medium variant with zero migration*	*Constant total population*	*Constant age group 15-64*	*Constant ratio 15-64/65 years or older*
		A. Total number			
France	525	0	1 473	5 459	93 794
Germany	11 400	0	17 838	25 209	188 497
Italy	660	0	12 944	19 610	119 684
Japan	0	0	17 141	33 487	553 495
Republic of Korea	-450	0	1 509	6 426	5 148 928
Russian Federation	7 417	0	27 952	35 756	257 110
United Kingdom	1 200	0	2 634	6 247	59 775
United States	41 800	0	6 384	17 967	592 757
Europe	23 530	0	100 137	161 346	1 386 151
European Union	16 361	0	47 456	79 605	700 506
		B. Average annual number			
France	10	0	27	99	1 705
Germany	207	0	324	458	3 427
Italy	12	0	235	357	2 176
Japan	0	0	312	609	10 064
Republic of Korea	-8	0	27	117	93 617
Russian Federation	135	0	508	650	4 675
United Kingdom	22	0	48	114	1 087
United States	760	0	116	327	10 777
Europe	428	0	1 821	2 934	25 203
European Union	297	0	863	1 447	12 736

TABLE IV.5. POTENTIAL SUPPORT RATIO IN 1995, AND IN 2050 BY SCENARIO AND COUNTRY OR REGION
(*Number of persons aged 15-64 per person aged 65 or older*)

		2050				
		I	*II*	*III*	*IV*	*V*
Country or region	*1995*	*Medium variant*	*Medium variant with zero migration*	*Constant total population*	*Constant age group 15-64*	*Constant ratio 15-64/65 years or older*
France	4.36	2.26	2.26	2.33	2.49	4.36
Germany	4.41	2.05	1.75	2.26	2.44	4.41
Italy	4.08	1.52	1.52	2.03	2.25	4.08
Japan	4.77	1.71	1.71	2.07	2.19	4.77
Republic of Korea	12.62	2.40	2.40	2.49	2.76	12.62
Russian Federation	5.62	2.43	2.44	2.86	3.12	5.62
United Kingdom	4.09	2.37	2.36	2.49	2.64	4.09
United States	5.21	2.82	2.57	2.63	2.74	5.21
Europe	4.81	2.11	2.04	2.38	2.62	4.81
European Union	4.31	1.97	1.89	2.21	2.42	4.31

TABLE IV.6. AVERAGE ANNUAL NET NUMBER OF MIGRANTS BETWEEN 2000 AND 2050, PER MILLION INHABITANTS IN 2000, BY SCENARIO AND COUNTRY OR REGION

Scenario	*I*	*II*	*III*	*IV*	*V*
Country or region	*Medium Variant*	*Medium variant with zero migration*	*Constant total population*	*Constant age group 15-64*	*Constant ratio 15-64/65 years or older*
France	110	0	500	1 854	30 430
Germany	2 519	0	4 244	6 009	44 825
Italy	109	0	4 414	6 531	39 818
Japan	0	0	2 705	5 103	82 634
Republic of Korea	138	0	643	2 738	2 184 700
Russian Federation	752	0	3 435	4 933	34 958
United Kingdom	341	0	899	2 132	20 383
United States	2 770	0	465	1 310	43 201
Europe	519	0	2 650	4 460	37 511
European Union	724	0	2 548	4 262	36 194

TABLE IV.7. PER CENT OF POST-1995 MIGRANTS AND THEIR DESCENDANTS IN TOTAL POPULATION IN 2050, BY SCENARIO AND COUNTRY OR REGION

Scenario	*I*	*II*	*III*	*IV*	*V*
Country or region	*Medium variant*	*Medium variant with zero migration*	*Constant total population*	*Constant age group 15-64*	*Constant ratio 15-64/65 years or older*
France	0.9	0.0	2.9	11.6	68.3
Germany	19.8	0.0	28.0	36.1	80.3
Italy	1.2	0.0	29.0	38.7	79.0
Japan	0.0	0.0	17.7	30.4	87.2
Republic of Korea	-0.9	0.0	3.2	13.9	99.2
Russian Federation	5.8	0.0	22.9	27.6	71.9
United Kingdom	1.9	0.0	5.5	13.6	59.2
United States	16.8	0.0	2.5	7.9	72.7
Europe	4.3	0.0	17.5	25.8	74.4
European Union	6.2	0.0	16.5	25.7	74.7

TABLE IV.8. NET ANNUAL MIGRATION FLOWS, 1990 TO 1998

Country or region/Year	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*
France	80 000	90 000	90 000	70 000	50 000	40 000	35 000	40 000	40 000
Germany	656 166	602 563	776 397	462 284	315 568	398 263	281 493	93 433	50 821
Italy	24 212	4 163	181 913	181 070	153 364	95 499	149 745	126 554	113 804
Japan	2 000	38 000	34 000	-10 000	-82 000	-50 000	-13 000	14 000	38 000
Republic of Korea[a]	-	-	-10 000	-	-	-	-	-20 000	-
Russian Federation	164 000	51 600	176 100	430 100	810 000	502 200	343 600	352 600	285 200
United Kingdom	68 384	76 416	44 887	90 141	84 242	116 869	104 075	88 476	-12 406
United States	1 536 483	1 827 167	973 977	904 292	804 416	720 461	915 900	798 378	660 477
Europe[a]	-	-	1 047 000	-	-	-	-	950 000	-
European Union	1 008 251	1 078 441	1 350 132	1 062 116	782 855	805 363	734 596	512 208	378 687

Sources: European Union, France, Germany, Italy and the United Kingdom: European Commission, Eurostat, *Demographic Statistics: Data 1960-99* (Luxembourg, 1999); Japan: Management and Coordination Agency, Statistics Bureau, *Japan Statistical Yearbook 2000* (Tokyo, 1999); Russian Federation: State Committee of the Russian Federation, *Russian Statistical Yearbook 1999* (Moscow, 1999); United States: Department of Justice, Immigration and Naturalization Service, *1997 Statistical Yearbook of the Immigration and Naturalization Service* (Washington, D.C., 1999a); Ibid, *Legal Immigration, Fiscal Year 1998*, Annual report No.2 (Washington, D.C., 1999b).

[a] Europe and the Republic of Korea: Averages for 1990-1995 and 1995-2000 from *World Population Prospects: The 1998 Revision*, vol.1 (United Nations).

NOTE: Data for the United States of America contains only immigration; data for all other countries is net migration

TABLE IV.9. MIGRANT STOCK (FOREIGN-BORN), 1990

Country or region	*Number of migrants (thousands)*	*Per cent of total population*
France	5 897	10.4
Germany[a]	5 037	6.4
Italy	1 549	2.7
Japan[a]	868	0.7
Russian Federation[b]	..	..
Republic of South Korea	900	2.1
United Kingdom	3 718	6.5
United States	19 603	7.9
Europe[c]	11 152	4.3
European Union	21 378	5.8

Source: *Trends in total migration stock, Revision 4* (POP/IB/DB/96/1/Rev.4), database maintained by the Population Division, Department of Economic and Social Affairs of the United Nations Secretariat.

[a]The data refer to foreign citizen.

[b]Data are not readily available.

[c]Data includes Bulgaria, Hungary, Poland, Romania, Denmark, Finland, Iceland, Ireland, Norway, Sweden, United Kingdom, Albania, Andorra, Greece, Italy, Malta, Liechtenstein, Luxembourg, Monaco, Netherlands, Switzerland; for the other European countries data are not readily available.

TABLE IV.10. UPPER LIMIT OF WORKING-AGE NEEDED TO OBTAIN IN 2050 THE POTENTIAL SUPPORT RATIO OBSERVED IN 1995, SCENARIO II, BY COUNTRY OR REGION

Country or region	*Age*
France	73.9
Germany	77.2
Italy	77.3
Japan	77.0
Republic of Korea	82.2
Russian Federation	72.7
United Kingdom	72.3
United States	74.3
Europe	75.1
European Union	75.7

TABLE IV.11. TOTAL POPULATION IN 1995 AND IN 2050, AND GROWTH RATES BY SCENARIO, BY COUNTRY OR REGION

		2050				
		I	*II*	*III*	*IV*	*V*
Country or region	*1995*	*Medium variant*	*Medium variant with zero migration*	*Constant total population*	*Constant age group 15-64*	*Constant ratio 15-64/65 years or older*
		A. Total population (thousands)				
France	58 020	59 883	59 357	61 121	67 130	187 193
Germany	81 661	73 303	58 812	81 661	92 022	299 272
Italy	57 338	41 197	40 722	57 338	66 395	193 518
Japan	125 472	104 921	104 921	127 457	150 697	817 965
Republic of Korea	44 949	51 275	51 751	53 470	60 125	6 233 275
Russian Federation	148 097	121 256	114 178	148 097	157 658	406 551
United Kingdom	58 308	56 667	55 594	58 833	64 354	136 138
United States	267 020	349 318	290 643	297 970	315 644	1 065 174
Europe	727 912	627 691	600 464	727 912	809 399	2 346 459
European Union	371 937	331 307	310 839	372 440	418 509	1 228 341
		B. Average annual growth rate 1995-2050 (per cent)				
France		0.06	0.04	0.09	0.27	2.13
Germany		-0.20	-0.60	0.00	0.22	2.36
Italy		-0.60	-0.62	0.00	0.27	2.21
Japan		-0.33	-0.33	0.03	0.33	3.41
Republic of Korea		0.24	0.26	0.32	0.53	8.97
Russian Federation		-0.36	-0.47	0.00	0.11	1.84
United Kingdom		-0.05	-0.09	0.02	0.18	1.54
United States		0.49	0.15	0.20	0.30	2.52
Europe		-0.27	-0.35	0.00	0.19	2.13
European Union		-0.21	-0.33	0.00	0.21	2.17


Figure IV.1. Average annual net number of migrants between 2000 and 2050 to maintain size of working-age population, per million inhabitants in 2000

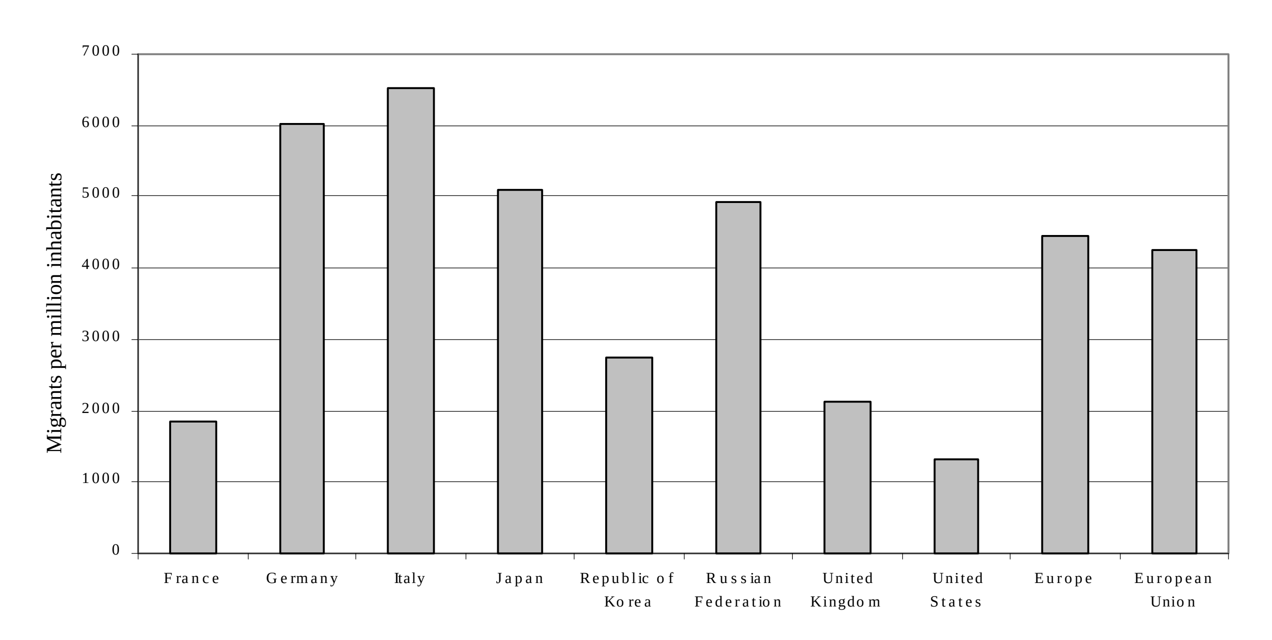
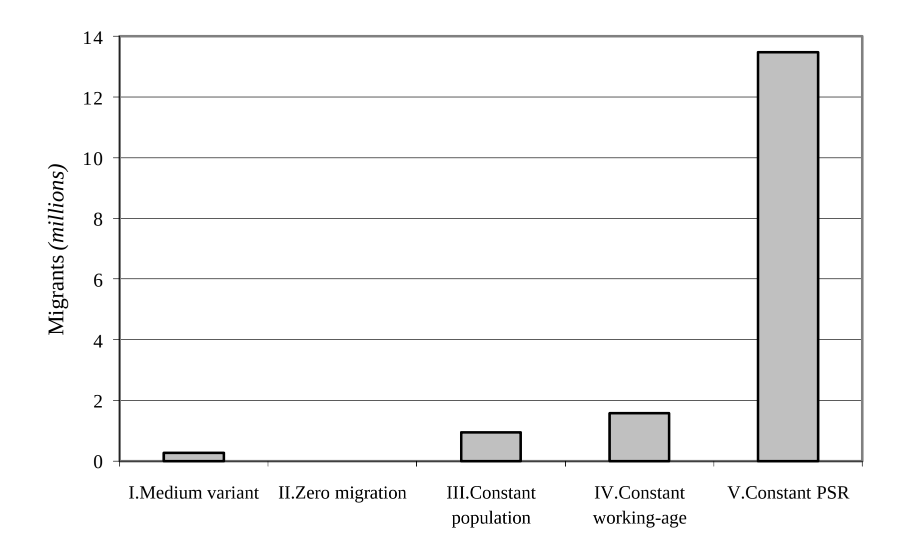


Figure IV.2. Average annual net number of migrants between 2000 and 2050, by scenario, for the European Union



FRANCE

Past trends

Between 1950 and 1965, the total fertility rate in France remained above 2.7 children per woman, but later dropped by 40 per cent, from 2.85 in 1960-1965 to 1.72 in 1990-1995. During that period the life expectancy at birth, for both sexes combined, increased from 66.5 years in 1950-1955 to 77.1 years in 1990-1995. One of the consequences of these changes was that the proportion of the population aged 65 or older increased from 11.4 per cent in 1950 to 15.0 per cent in 1995, while the proportion of the population aged 15-64 remained nearly constant at nearly 66 per cent. France was the country with the oldest population at the turn of the century. In 1901 the potential support ratio was 7.8 persons aged 15-64 for each person aged 65 or older. It declined further to 5.8 in 1950 and to 4.4 in 1995.

Scenario I

Scenario I, the medium variant of the 1998 United Nations projections, assumes a total of 525,000 net immigrants from 1995 to 2020 and none after 2020. It projects that the total population of France would increase from 58.0 million in 1995 to 61.7 million in 2025, and decline to 59.9 million in 2050 (The results of the 1998 United Nations projections are shown in the annex tables). At that date 525,000 persons (0.9 per cent of the total population) would be post-1995 migrants or their descendants. The population aged 15-64 would increase from 38.0 million in 1995 to 39.9 million in 2010, and then decrease to 34.6 million in 2050. The population aged 65 or older would keep increasing, from 8.7 million in 1995 to 15.4 million in 2040, before declining slightly to 15.3 million in 2050. As a result, the potential support ratio would decrease by nearly half, from 4.4 in 1995 to 2.3 in 2050.

Scenario II

Scenario II, which is the medium variant with zero migration, uses the fertility and mortality assumptions of the medium variant of the 1998 United Nations projections, but without any migration to France after 1995. The results are very similar to those of scenario I. The total population of France would increase from 58.0 million in 1995 to 61.1 million in 2025, and then start decreasing, to 59.4 million in 2050. The population aged 15-64 would increase from 38.0 million in 1995 to 39.6 million in 2010, and then decrease to 34.3 million in 2050. The population aged 65 or older would keep increasing, from 8.7 million in 1995 to 15.3 million in 2040, before declining slightly to 15.2 million in 2050. As a result, the potential support ratio would decrease by nearly half, from 4.4 in 1995 to 2.3 in 2050.

Scenario III

Scenario III keeps the size of the total population constant at its maximum of 61.1 million in 2025. In order to do so, it would be necessary to have 1.5 million immigrants between 2025 and 2050, an average of 60,000 per year. By 2050, out of a total population of 61.1 million, 1.8 million, or 2.9 per cent, would be post-1995 immigrants or their descendants.

Scenario IV

Scenario IV keeps the size of the population aged 15-64 constant at its maximum of 39.6 million in 2010. In order to do so, 5.5 million immigrants would be needed between 2010 and 2050, an average of

136,000 per year. By 2050, out of a total population of 67.1 million, 7.8 million, or 11.6 per cent, would be post-1995 immigrants or their descendants.

Scenario V

Scenario V keeps the potential support ratio at its 1995 value of 4.4. In order to do so, 32.1 million immigrants would be needed from 2000 to 2025, an average of 1.3 million per year, and 60.9 million immigrants from 2025 to 2050, an average of 2.4 million per year. By 2050, out of a total population of 187 million, 128 million, or 68.3 per cent, would be post-1995 immigrants or their descendants.

Discussion

As a point of comparison, the official net immigration recorded in France was an average of 76,000 per year for 1990-1994 and an average of 39,000 per year for 1995-1998. Thus, the number of migrants needed to prevent a decline in the total size of the population (scenario III) would be comparable to past experience of immigration to France. Furthermore, the number of migrants that would be needed to keep constant the size of the population in labour-force age (scenario IV) is about double the level experienced in the early 1990s. In addition, under scenario IV, in 2050 the proportion of post-1995 immigrants and their descendants within the total population (11.6 per cent) would be comparable to the proportion of foreign-born that exists currently (10.4 per cent in 1990). Figure IV.4 shows, for scenarios I, II, III and IV, the population of France in 2050, indicating the share that are post-1995 migrants and their descendants.

However, the number of immigrants needed to keep the potential support ratio at its 1995 level would be vastly larger than any previously experienced migration flow, 20 to 40 times the annual numbers of the last 10 years. Furthermore more than two thirds of the resulting population in 2050 would be composed of post-1995 immigrants and their descendants.

In absence of migration, the figures show that it would be necessary to raise the upper limit of the working-age to about 74 years in order to obtain in 2050 the same potential support ratio observed in 1995 in France, i.e. 4.4 persons of working-age per each older person past working-age.

TABLE IV.12. POPULATION INDICATORS FOR FRANCE BY PERIOD FOR EACH SCENARIO

Scenario / *Period*	*I* Medium variant	*II* Medium variant with zero migration	*III* Constant total population	*IV* Constant age group 15-64	*V* Constant ratio 15-64/65 years or older
			A. Average annual number of migrants (thousands)		
1995-2000	40	0	0	0	842
2000-2025	13	0	0	114	1 282
2025-2050	0	0	59	105	2 301
2000-2050	7	0	29	109	1 792
1995-2050	10	0	27	99	1 705
			B. Total number of migrants (thousands)		
1995-2000	200	0	0	0	4 210
2000-2025	325	0	0	2 838	32 054
2025-2050	0	0	1 473	2 621	57 530
2000-2050	325	0	1 473	5 459	89 584
1995-2050	525	0	1 473	5 459	93 794
			C. Total population (thousands)		
1950	41 829	-	-	-	-
1975	52 699	-	-	-	-
1995	58 020	-	-	-	-
2000	59 080	58 879	58 879	58 879	63 310
2025	61 662	61 121	61 121	64 442	105 188
2050	59 883	59 357	61 121	67 130	187 193
			D. Age group 0-14 (thousands)		
1950	9 498	-	-	-	-
1975	12 594	-	-	-	-
1995	11 326	-	-	-	-
2000	11 047	11 009	11 009	11 009	12 182
2025	10 588	10 495	10 495	11 399	21 788
2050	10 012	9 924	10 393	11 572	38 396
			E. Age group 15-64 (thousands)		
1950	27 569	-	-	-	-
1975	33 004	-	-	-	-
1995	37 986	-	-	-	-
2000	38 620	38 488	38 488	38 488	41 593
2025	37 686	37 355	37 355	39 625	67 847
2050	34 586	34 282	35 493	39 625	121 047
			F. Age group 65+ (thousands)		
1950	4 762	-	-	-	-
1975	7 101	-	-	-	-
1995	8 708	-	-	-	-
2000	9 413	9 381	9 381	9 381	9 535
2025	13 388	13 271	13 271	13 417	15 554
2050	15 285	15 151	15 234	15 932	27 750
			G. Potential support ratio 15-64/65+		
1950	5.79	-	-	-	-
1975	4.65	-	-	-	-
1995	4.36	-	-	-	-
2000	4.10	4.10	4.10	4.10	4.36
2025	2.81	2.81	2.81	2.95	4.36
2050	2.26	2.26	2.33	2.49	4.36

FRANCE

Figure IV.3. Age-sex structures by scenario for 2000, 2025 and 2050
(*Population in millions*)

Medium variant | Constant total population

Figure IV.3 (continued)

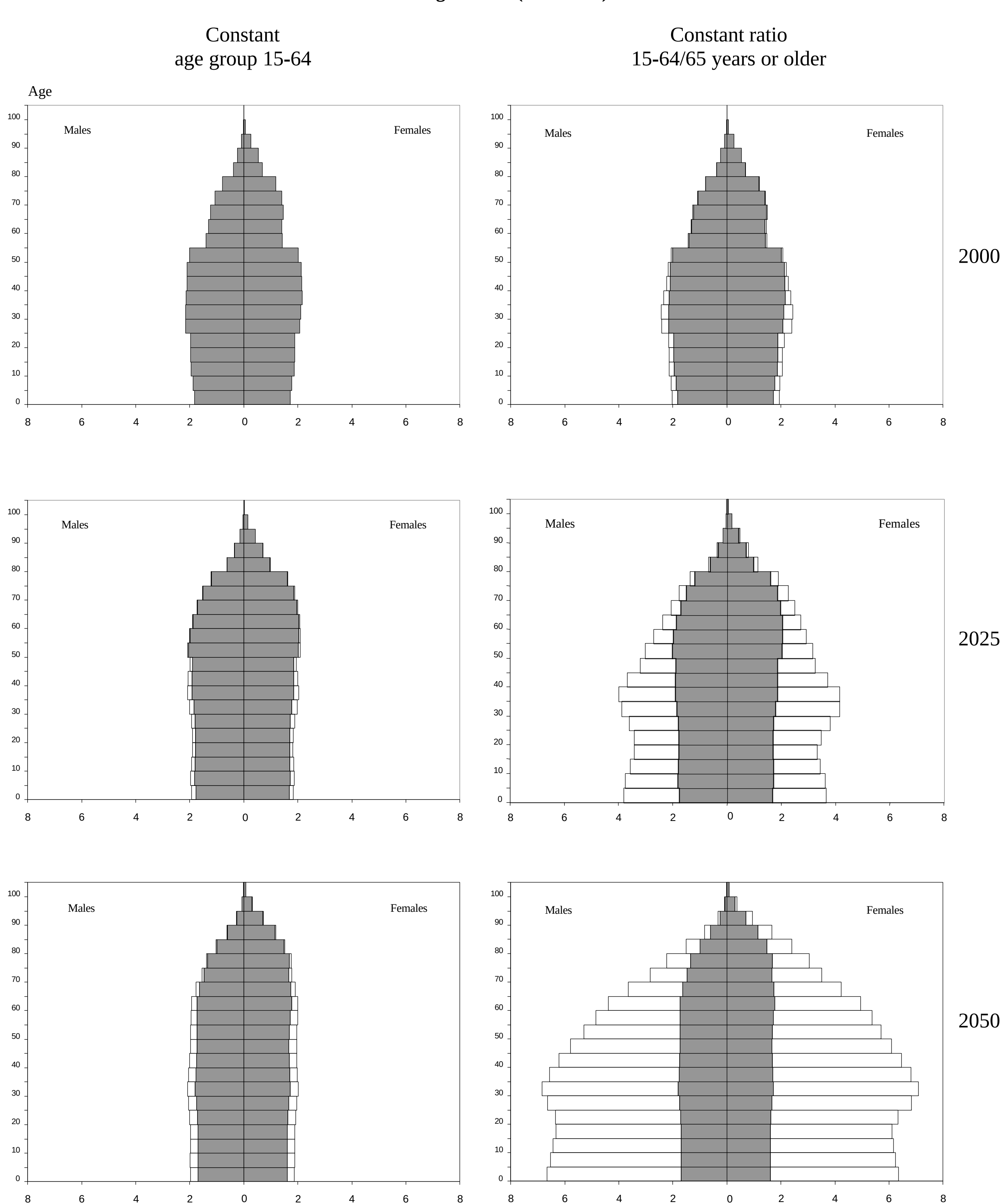
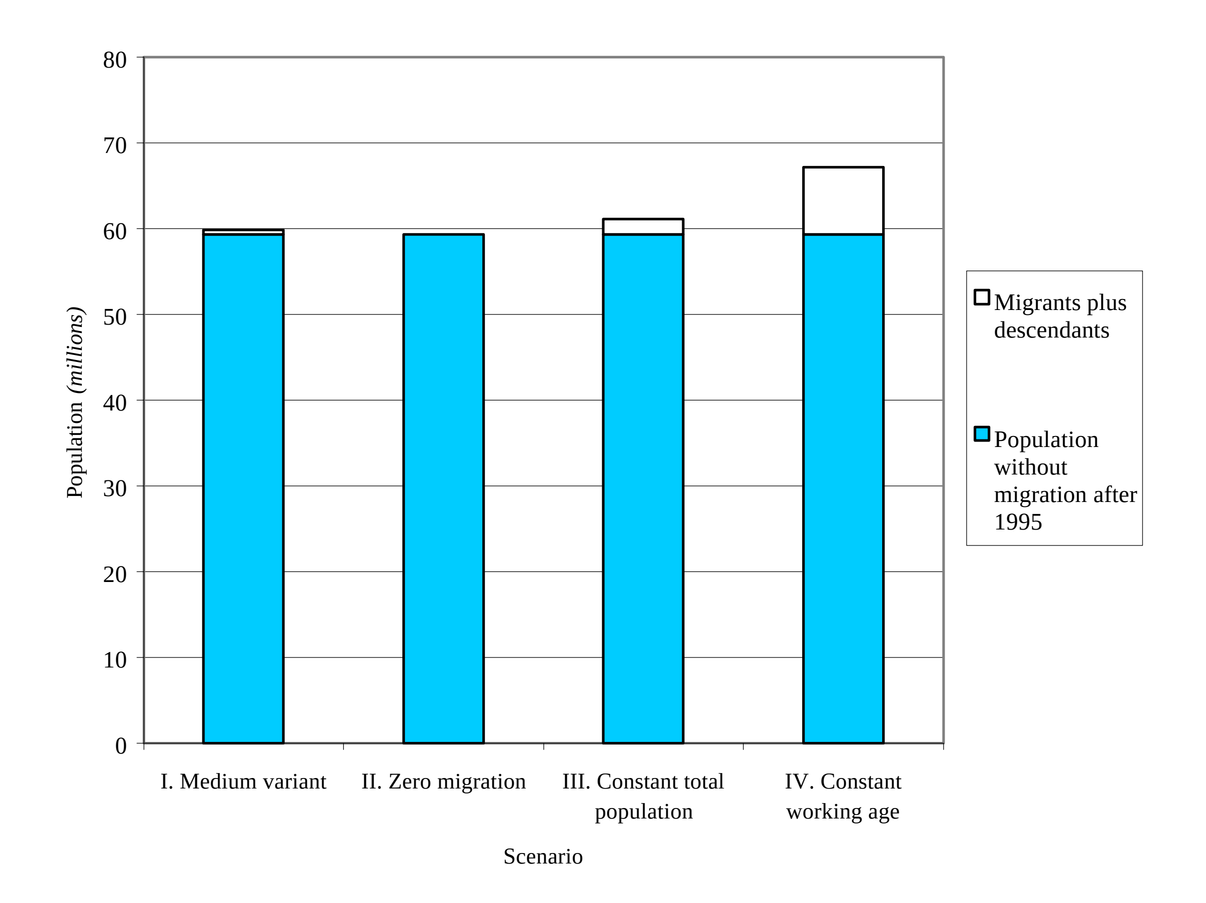



Figure IV.4. Population of France in 2050, indicating those who are post-1995 migrants and their descendants, by scenario



GERMANY

Past trends

While the total fertility rate increased steadily, from 2.16 to 2.49 children per woman, between 1950-1955 and 1960-1965, Germany experienced a continuous decline afterwards, to 1.30 children per woman in 1990-1995. As in other countries in Western Europe, life expectancy increased during the entire period between 1950 and 1995. It reached 76 years for both sexes during the interval of 1990-1995, up from 67.5 years for 1950-1955. One of the results of increased life expectancy and low fertility rates is the process of population ageing. The proportion of the population aged 65 years or older increased from 9.7 per cent in 1950 to 15.5 per cent in 1995. The potential support ratio declined from 6.9 persons aged 15-64 years for one person aged 65 years or over in 1950 to 4.4 persons in 1995.

Scenario I

Scenario I, the medium variant of the United Nations *1998 Revision*, assumes a net total of 11.4 million migrants between 1995 and 2050. For the years 1995-2005 it estimates 240,000 migrants per year and for the period between 2005 and 2050 a net migration of 200,000 persons per annum. For the overall population of Germany the medium variant projects an increase from 81.7 million in 1995 to 82.4 million in 2005. Thereafter, the population would continuously decline to 73.3 million in 2050 (The results of the 1998 United Nations projections are shown in the annex tables). The population aged 15-64 years would slightly increase from 55.8 million in 1995 to 56.0 million in 2000; between 2000 and 2050 it would continuously decrease to 42.7 million. The share of the elderly (65 years and above) would increase from 12.6 million in 1995 (15.5 per cent) to 20.8 million in 2050 (28.4 per cent). Consequently, the potential support ratio would be halved, decreasing from 4.4 in 1995 to 2.1 in 2050.

Scenario II

Scenario II is based on the fertility and mortality assumptions of the medium variant of the *1998 Revision* of the United Nations, but without any migration to Germany after 1995. Compared to scenario I, the total population would decrease much faster, from 81.7 million in 1995 to 58.8 million in 2050, a 28 per cent decrease for the total population. The population aged 15-64 years would decrease even faster: from 55.8 million to 32.7 million, a 41 per cent loss. In the absence of any migration, the population aged 65 or older would increase to 18.7 million by the year 2050. As a result, the potential support ratio in scenario II would decrease from 4.4 in 1995 to 1.8 in 2050.

Scenario III

Scenario III assumes a constant total population between 1995 and 2050 (81.7 million). Keeping the population at such a level would require substantially higher immigration to Germany than anticipated by the United Nations *1998 Revision*. Between 1995-2050, a total of 17.8 million net migrants would be needed, an average of 324,000 per year. Such a migration flow would result in a population 15-64 of 48.4 million, and the group of 65 years or older would increase to 21.4 million in 2050. The potential support ratio would decline from 4.4 to 2.3 in 2050. In 2050, out of a population of 82 million people, 23 million (28 per cent) would be post-1995 migrants or their descendants.

Scenario IV

Scenario IV keeps the size of the population aged 15-64 years constant at the 1995 level of 55.8 million until the year 2050. This would require a total of 25.2 million migrants between 1995 and 2050, an average of 458,000 per year. The total population of Germany would increase to 92 million in 2050, of which 33 million (36 per cent) would be post-1995 migrants and their descendants. The potential support ratio would be 2.4 in 2050.

Scenario V

Scenario V keeps the potential support ratio constant at its 1995 level of 4.4 until 2050. The total of immigrants needed between 1995 and 2050 to keep this ratio constant would be 188.5 million, which is an average of 3.4 million migrants per year. In 2050 the total population would be 299 million, of which 80 per cent would be post-1995 migrants and their descendants.

Discussion

Net migration in the years 1990-1992 was close to 680,000 individuals per annum. That number decreased between 1993-1998 to about 270,000 persons per year. The net numbers of migrants needed to keep the total population constant (324,000 per year), or to keep the age group 15-64 year constant (458,000 per year) are within the range of the experience of the past decade. However, to maintain the current potential support ratio of 4.4 would require an influx of 3.4 million migrants per year. This number would be more than ten times the yearly amount of migrants entering Germany during 1993-1998.

Figure IV.6 shows, for scenarios I, II, III and IV, the population of Germany in 2050, indicating the share that are post-1995 migrants and their descendants. By the end of 1997, foreigners accounted for almost 9 per cent of the total population in Germany. This should be compared to the proportion by the year 2050 of the post-1995 migrants and their descendants: 20 per cent in scenario I; 28 per cent in scenario III; 36 per cent in scenario IV; and 80 per cent in scenario V.

In absence of migration, the figures show that it would be necessary to raise the upper limit of the working-age to about 77 years in order to obtain in 2050 the same potential support ratio observed in 1995 in Germany, i.e. 4.4 persons of working-age per each older person past working-age.

TABLE IV.13. POPULATION INDICATORS FOR GERMANY BY PERIOD FOR EACH SCENARIO

Scenario	*I*	*II*	*III*	*IV*	*V*
Period	*Medium variant*	*Medium variant with zero migration*	*Constant total population*	*Constant age group 15-64*	*Constant ratio 15-64/65 years or older*
		A. Average annual number of migrants (thousands)			
1995-2000	240	0	130	176	1 398
2000-2025	208	0	279	473	2 273
2025-2050	200	0	408	501	4 988
2000-2050	204	0	344	487	3 630
1995-2050	207	0	324	458	3 427
		B. Total number of migrants (thousands)			
1995-2000	1 200	0	650	880	6 990
2000-2025	5 200	0	6 978	11 816	56 816
2025-2050	5 000	0	10 209	12 514	124 692
2000-2050	10 200	0	17 187	24 330	181 508
1995-2050	11 400	0	17 838	25 209	188 497
		C. Total population (thousands)			
1950	68 376	-	-	-	-
1975	78 679	-	-	-	-
1995	81 661	-	-	-	-
2000	82 220	80 985	81 661	81 898	88 241
2025	80 238	72 643	81 661	87 451	148 307
2050	73 303	58 812	81 661	92 022	299 272
		D. Age group 0-14 (thousands)			
1950	15 854	-	-	-	-
1975	16 932	-	-	-	-
1995	13 264	-	-	-	-
2000	12 751	12 468	12 640	12 700	14 315
2025	10 704	9 248	11 219	12 543	25 244
2050	9 803	7 379	11 807	13 398	54 694
		E. Age group 15-64 (thousands)			
1950	45 877	-	-	-	-
1975	50 073	-	-	-	-
1995	55 763	-	-	-	-
2000	56 025	55 114	55 595	55 763	60 271
2025	50 773	45 042	51 588	55 763	100 331
2050	42 706	32 744	48 426	55 763	199 400
		F. Age group 65+ (thousands)			
1950	6 645	-	-	-	-
1975	11 674	-	-	-	-
1995	12 634	-	-	-	-
2000	13 444	13 403	13 427	13 435	13 656
2025	18 762	18 354	18 854	19 144	22 732
2050	20 794	18 689	21 428	22 861	45 178
		G. Potential support ratio l5-64/65+			
1950	6.90	-	-	-	-
1975	4.29	-	-	-	-
1995	4.41	-	-	-	-
2000	4.17	4.11	4.14	4.15	4.41
2025	2.71	2.45	2.74	2.91	4.41
2050	2.05	1.75	2.26	2.44	4.41

GERMANY

Figure IV.5. Age-sex structures by scenario for 2000, 2025 and 2050
(*Population in millions*)

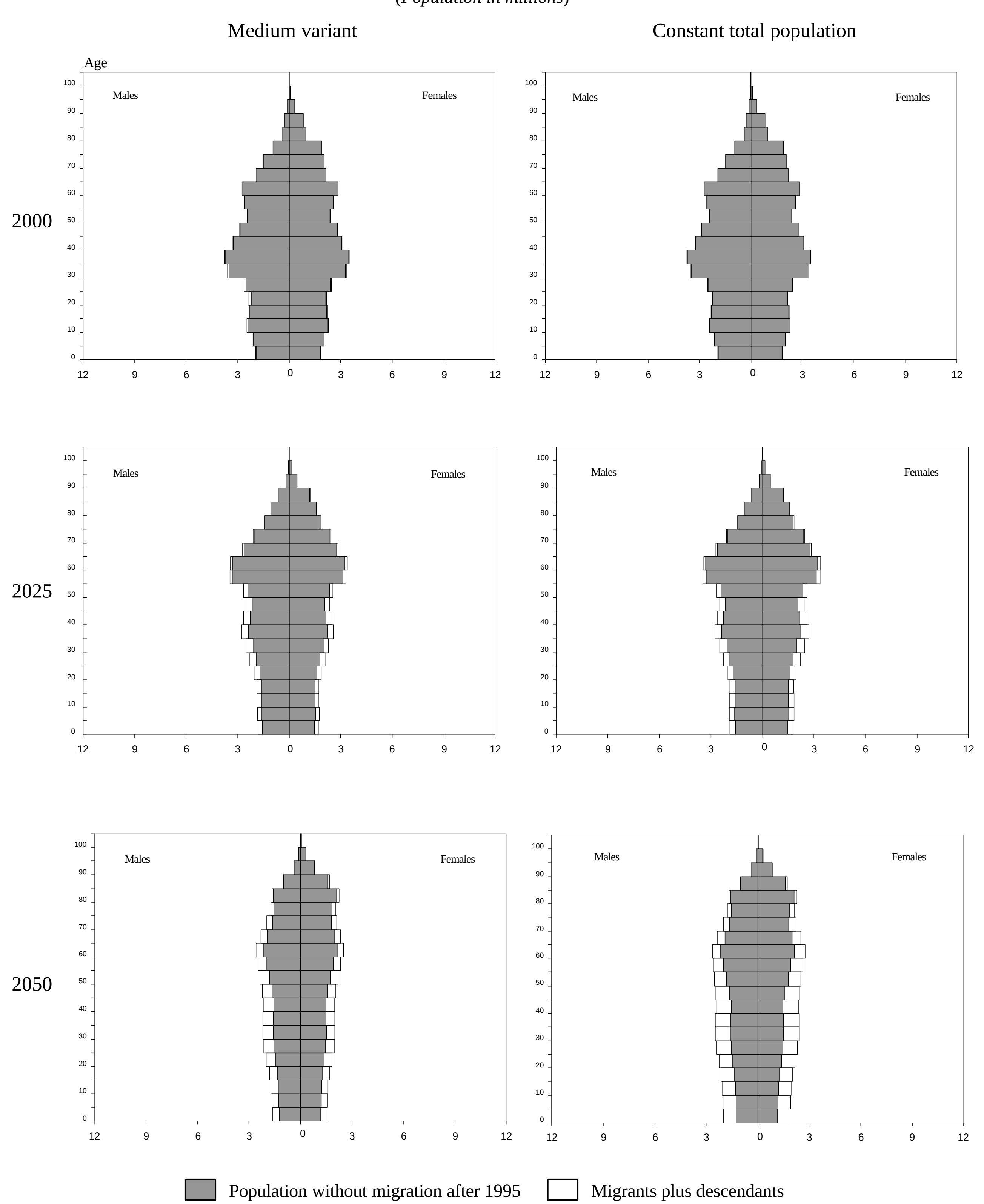


Figure IV.5 (continued)

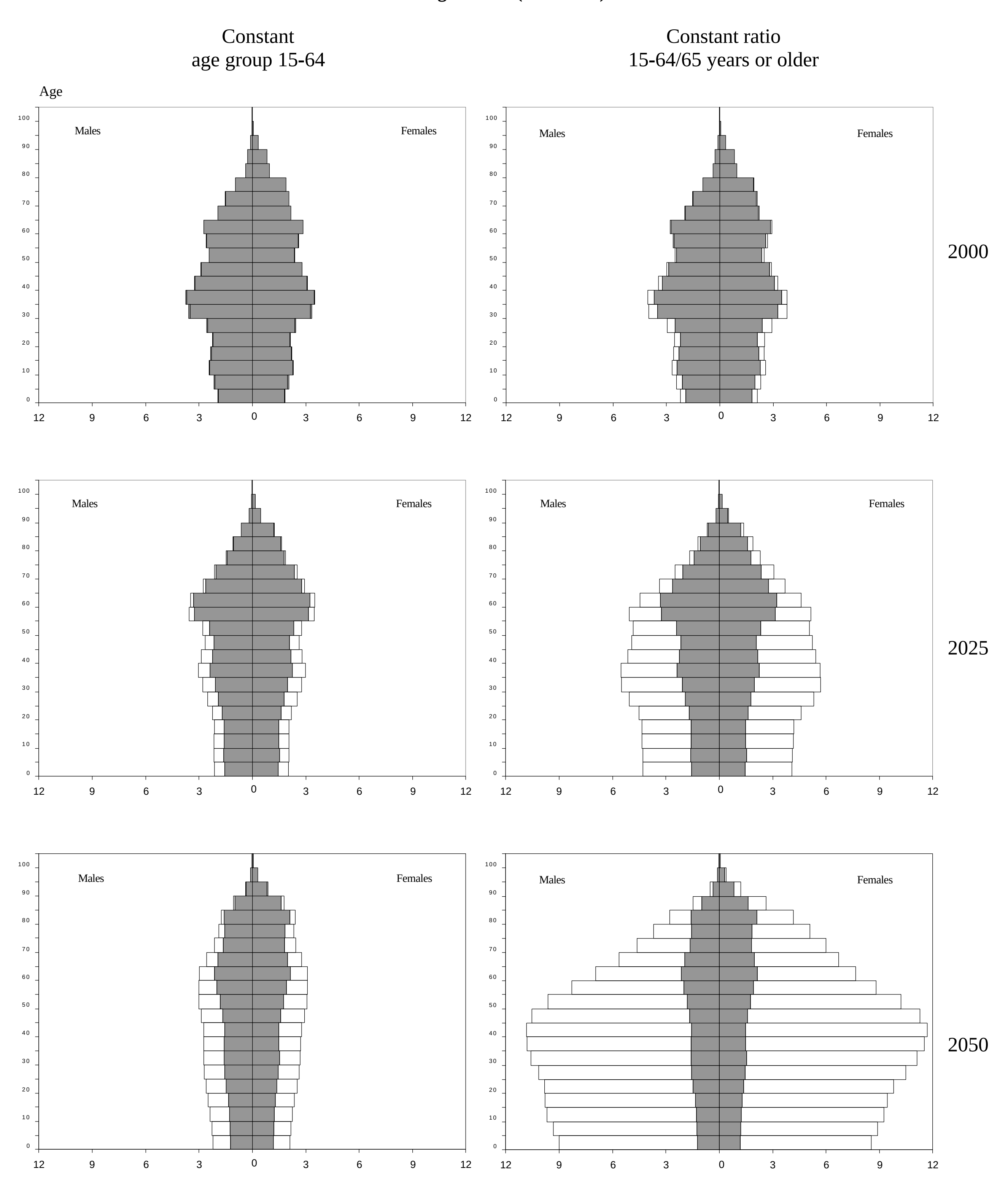
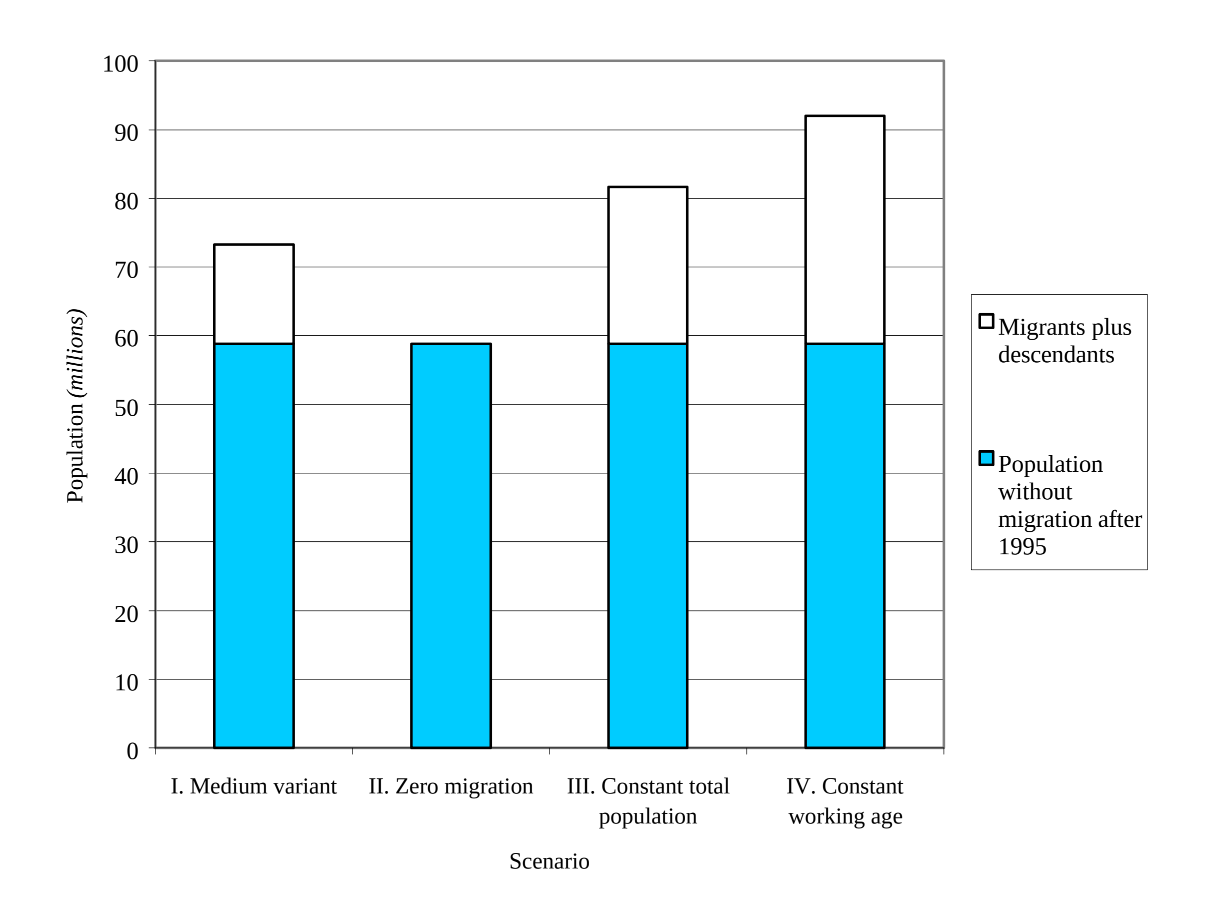


Figure IV.6. Population of Germany in 2050, indicating those who are post-1995 migrants and their descendants, by scenario



ITALY

Past trends

The total fertility rate in Italy went up from 2.3 in 1950-1960 to 2.5 in 1960-1970, and has been declining ever since. It has been below replacement level since 1975, and in 1995-2000 it is estimated at 1.20 children per woman, one of the lowest in the world. Since 1950 mortality has declined consistently, resulting in an increase in life expectancy for both sexes from 66.0 years in 1950-1955 to 77.2 years in 1990-1995. Despite an estimated net annual immigration of 70,000 in 1995-2000, the population of Italy declined during 1995-2000. Among the consequences of these demographic changes is the more than doubling of the proportion of the population aged 65 or older, from 8.3 per cent of the population in 1950 to 16.8 per cent in 1995.

As a result of these changes, the potential support ratio for Italy has declined from 7.9 persons aged 15-64 for each person aged 65 or older in 1950 to 4.1 in 1995.

Scenario I

This scenario, which is the medium variant of the United Nations *1998 Revision*, assumes that there will be 660,000 net immigrants between 1995 and 2020, after which there would be no more migration to Italy. Under this scenario, the population of Italy would decline by 28 per cent, from 57.3 million in 1995 to 41.2 million in 2050 (The results of the 1998 United Nations projections are shown in the annex tables). The population aged 15-64 would decline by 44 per cent over the same period, while the population over 65 years old would increase by 49 per cent, from 9.6 million to 14.4 million. Persons aged 65 or older would constitute more than one-third of the population of Italy by 2050. As a result, the potential support ratio would decrease by 63 per cent from 4.1 in 1995 to 1.5 in 2050.

Scenario II

Scenario II, which is the medium variant with zero migration, assumes that fertility and mortality will change according to the medium variant projections of the United Nations *1998 Revision*, but that there will be no migration into Italy after 1995. The results are very similar to those in Scenario I. Italy's population in 2050 would be 40.7 million, only 475,000 persons less than under Scenario I. There would be 21.6 million and 14.2 million persons aged 15-64 and 65 or older, respectively, in 2050. As in Scenario I, the potential support ratio would decrease by 63 per cent from 4.1 in 1995 to 1.5 in 2050.

Scenario III

It is assumed, for Scenario III, that between 1995 and 2050 the total population of Italy will remain constant at its 1995 size of 57.3 million persons. A total of 12.9 million net migrants between 1995 and 2050 would be required to attain this goal. The annual net immigration would increase steadily from 75,000 in 1995-2000 to 318,000 in 2045-2050. Under this scenario, by 2050, 16.6 million persons, or about 29 per cent of the population, would be post-1995 immigrants or their descendants.

Scenario IV

This scenario assumes that Italy's population aged 15-64 would remain constant at its 1995 level of 39.2 million, stopping the decline in the size of this age group. To achieve this objective, 19.6 million immigrants would be needed between 1995 and 2050. The average annual number of migrants would vary, reaching a peak of 613,000 persons per year between 2025 and 2030 and then declining to 173,000 per year in 2045-2050. Under this scenario, the population of Italy would grow by 16 per cent from 57.3 million in 1995 to 66.4 million in 2050. By the year 2050, 39 per cent of the population would be post-1995 migrants or their descendants. The potential support ratio would decrease from 4.1 in 1995 to 2.2 in 2050.

Scenario V

Scenario V keeps the potential support ratio at its 1995 level of 4.08. A total of 120 million immigrants between 1995 and 2050 would be required to maintain this constant ratio, yielding an overall average of 2.2 million immigrants per year. The resultant population of Italy in 2050 under this scenario would be 194 million, more than three times the size of the 1995 Italian population. Of this population, 153 million, or 79 per cent, would be post-1995 immigrants or their descendants.

Discussion

In 1995-2000, Italy's population growth rate is estimated at –0.01 per cent. This decline in population is expected despite a net immigration of 70,000 persons per year. The numbers of foreign-born in Italy have almost doubled from 821,000 in 1965 (1.6 per cent of the total population) to 1.5 million in 1995 (2.7 per cent of the population). According to Scenario III, to keep Italy's population from declining from its 1995 size, annual migration flows would have to be more than three times as large, on average, between 1995 and 2050 as was the case between 1990 and 1995. To keep the population in working-age from declining would require more than five times the 1990-1995 annual level of migration. In addition, for scenarios III and IV, the proportions of Italy's population in 2050 that would be made up of post-1995 immigrants or their descendants, 29 per cent and 39 per cent, respectively, are more than 10 times the proportion of the foreign-born population in 1995. Figure IV.8 shows, for scenarios I, II, III and IV, the population of Italy in 2050, indicating the share that are post-1995 migrants and their descendants.

The demographic changes are even greater in scenario V. This scenario requires more than twice as many immigrants between 1995 and 2050 as the total 1995 population of the country. Moreover, nearly four fifths of the resulting 2050 population of 194 million would be made up of post-1995 immigrants or their descendants.

In the absence of migration, the figures show that in order to maintain in 2050 the 1995 ratio of 4.1 persons in working-age for each older person past working-age, would require increasing by 2050 the upper limit of the working-age span to 77 years.

TABLE IV.14. POPULATION INDICATORS FOR ITALY BY PERIOD FOR EACH SCENARIO

Scenario	*I*	*II*	*III*	*IV*	*V*
Period	*Medium variant*	*Medium variant with zero migration*	*Constant total population*	*Constant age group 15-64*	*Constant ratio 15-64/65 years or older*
			A. Average annual number of migrants (thousands)		
1995-2000	70	0	75	203	1 261
2000-2025	12	0	214	315	1 310
2025-2050	0	0	289	428	3 225
2000-2050	6	0	251	372	2 268
1995-2050	12	0	235	357	2 176
			B. Total number of migrants (thousands)		
1995-2000	350	0	375	1 015	6 305
2000-2025	310	0	5 340	7 887	32 759
2025-2050	0	0	7 229	10 709	80 622
2000-2050	310	0	12 569	18 596	113 381
1995-2050	660	0	12 944	19 610	119 684
			C. Total population (thousands)		
1950	47 104	-	-	-	-
1975	55 441	-	-	-	-
1995	57 338	-	-	-	-
2000	57 298	56 950	57 338	58 000	63 477
2025	51 270	50 679	57 338	61 064	96 664
2050	41 197	40 722	57 338	66 395	193 518
			D. Age group 0-14 (thousands)		
1950	12 397	-	-	-	-
1975	13 436	-	-	-	-
1995	8 483	-	-	-	-
2000	8 165	8 116	8 214	8 380	9 760
2025	5 871	5 802	7 246	8 013	15 280
2050	4 945	4 888	8 124	9 717	35 615
			E. Age group 15-64 (thousands)		
1950	30 817	-	-	-	-
1975	35 326	-	-	-	-
1995	39 234	-	-	-	-
2000	38 721	38 486	38 762	39 234	43 139
2025	32 026	31 659	36 506	39 234	65 358
2050	21 875	21 623	32 985	39 234	126 808
			F. Age group 65+ (thousands)		
1950	3 890	-	-	-	-
1975	6 678	-	-	-	-
1995	9 621	-	-	-	-
2000	10 412	10 349	10 362	10 386	10 578
2025	13 373	13 218	13 586	13 817	16 026
2050	14 377	14 211	16 230	17 444	31 094
			G. Potential support ratio 15-65/65+		
1950	7.92	-	-	-	-
1975	5.29	-	-	-	-
1995	4.08	-	-	-	-
2000	3.72	3.72	3.74	3.78	4.08
2025	2.39	2.40	2.69	2.84	4.08
2050	1.52	1.52	2.03	2.25	4.08

ITALY

Figure IV.7. Age-sex structures by scenario for 2000, 2025 and 2050
(*Population in millions*)

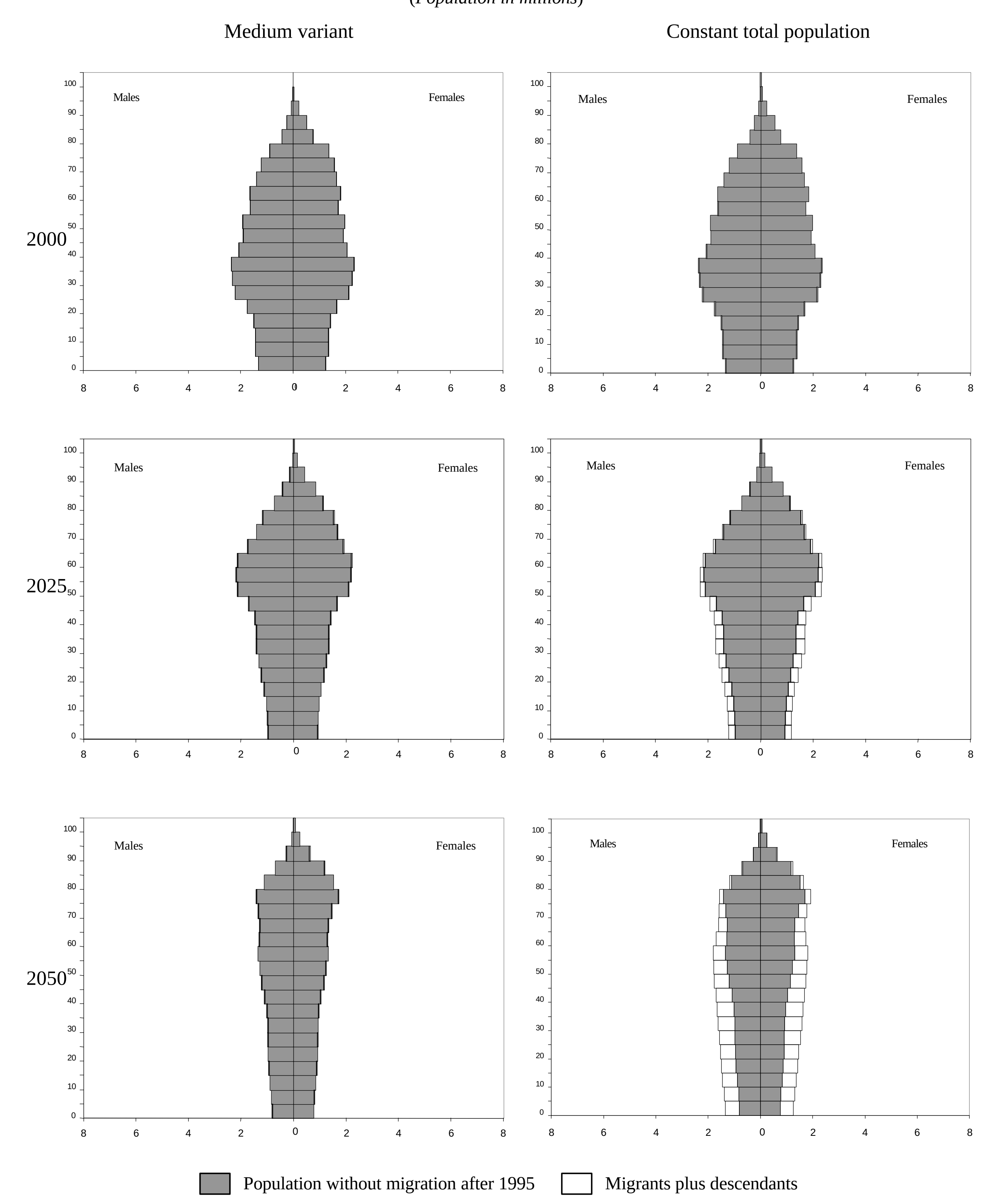


Figure IV.7 (continued)

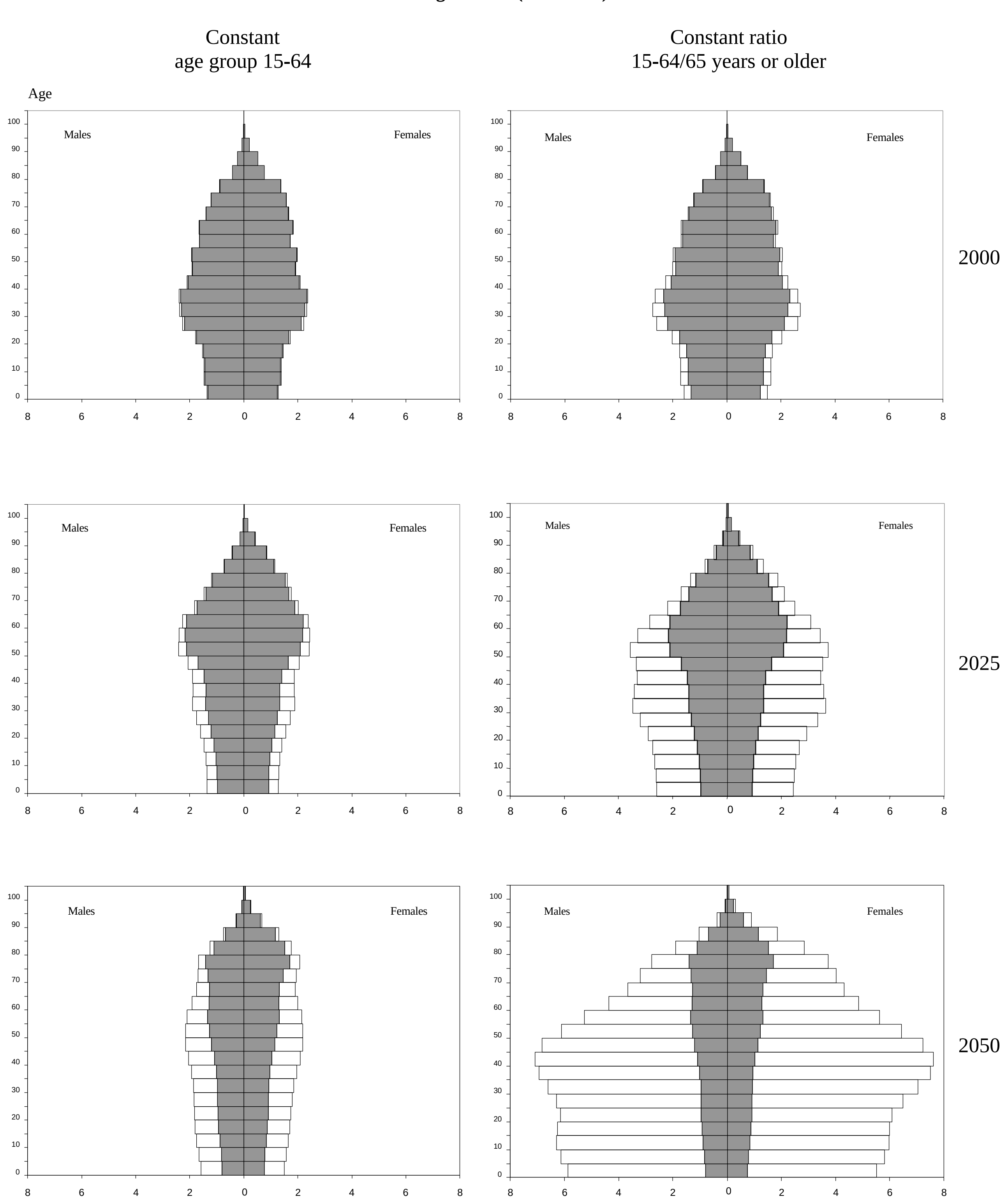
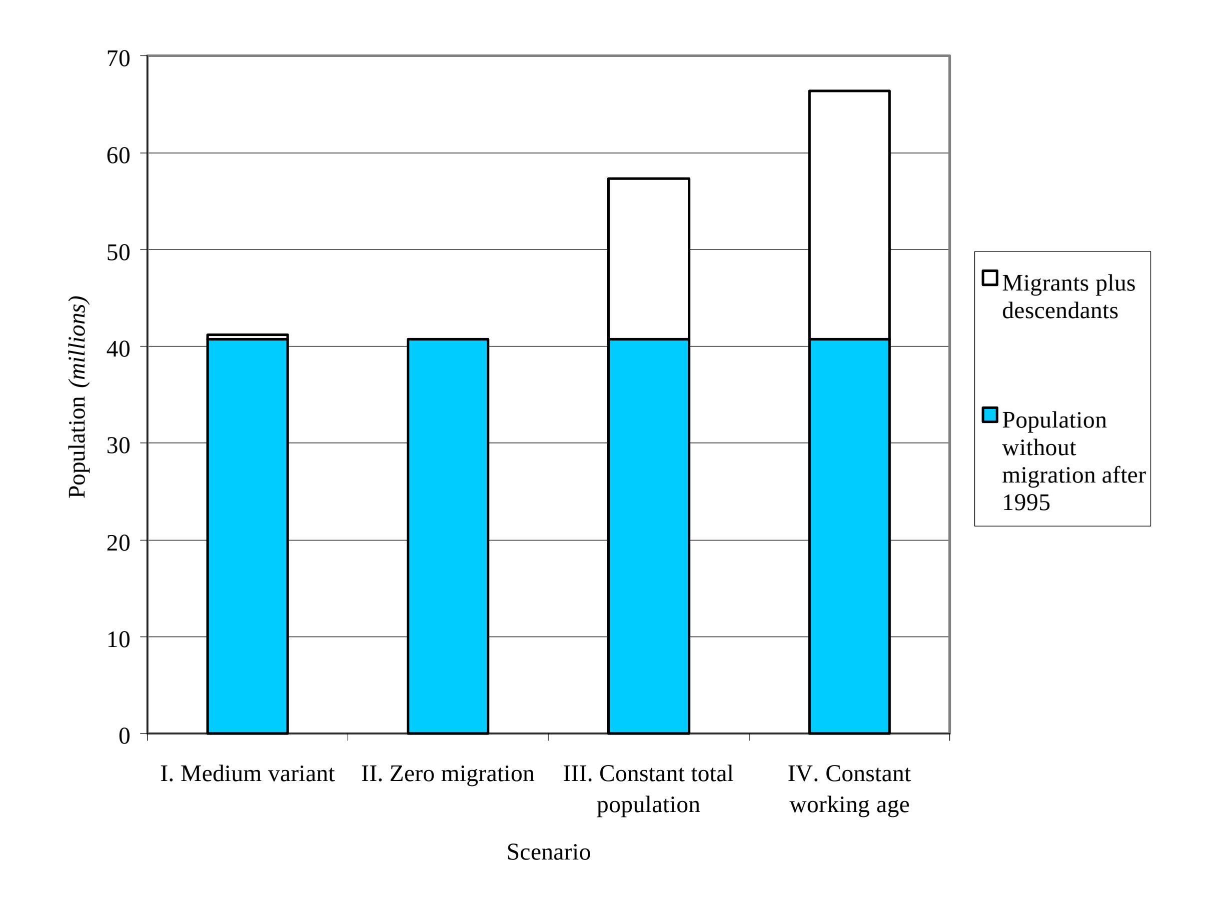


Figure IV.8. Population of Italy in 2050, indicating those who are post-1995 migrants and their descendants, by scenario



JAPAN

Past trends

The total fertility rate in Japan fell from 2.75 births per women in 1950-1955 to 2.08 births in 1955-1960. Total fertility remained at the near-replacement level between 1960 and 1975, and it resumed falling slowly, reaching 1.49 births in 1990-1995. During the same period, the life expectancy at birth, for both sexes combined, increased markedly from 63.9 years in 1950-1955 to 79.5 years in 1990-1995. The fertility decline and the increase of life expectancy in Japan brought about an increase in the proportion of the elderly. In 1995, the retired-age population (65 years old and over) represented 14.6 per cent of the total population, as compared to only 4.9 per cent in 1950. The ratio of the working-age population (15-64 years old) to the retired-age population increased from 11.0 in 1920 to 12.2 in 1950. It decreased rapidly after, to 4.8 in 1995. The notable increase in the median age of the population, from 22.3 years old in 1950 to 39.7 years old in 1995, is also indicative of the rapid demographic ageing that has taken place in Japan.

Scenario I

The 1998 United Nations population projection assumes no net immigration to Japan from 1995 through 2050. According to its medium variant projection, the population of Japan would increase from 125.5 million in 1995 and reach its peak in 2005 at 127.5 million. Then the population would decline to 104.9 million by 2050 (The results of the 1998 United Nations projections are shown in the annex tables). The working age population (15-64 years old) of Japan is projected to decline continuously from 87.2 million in 1995 to 57.1 million in 2050. The population aged 65 or older would increase from 18.3 million in 1995 to 34.0 million in 2045 and then decrease slightly to 33.3 million in 2050. As a result, the percentage of population aged 65 or older in the total population would more than double from 14.6 per cent in 1995 to 31.8 per cent in 2050. The ratio of the working-age population to the retired-age population would continue declining from 4.8 in 1995 to 2.2 in 2025 and 1.7 in 2050.

Scenario II

Because the United Nation 1998 Revision assumes zero net migration in carrying out the population projections for Japan, scenarios I and II yield the same results.

Scenario III

According to the medium variant projection of the United Nations 1998 Revision, the population of Japan would reach a maximum in 2005 at 127.5 million. If Japan wishes to keep the size of population at the level attained in the year 2005, the country would need 17 million net immigrants up to the year 2050, or an average of 381,000 immigrants per year between 2005 and 2050. By 2050, the immigrants and their descendants would total 22.5 million and comprise 17.7 per cent of the total population of the country.

Scenario IV

In order to keep the size of the working-age population constant at the 1995 level or 87.2 million, Japan would need 33.5 million immigrants from 1995 through 2050. This means an average of 609,000 immigrants needed per year during this period. Under this scenario, the population of the country is projected to be 150.7 million by 2050. The number of post-1995 immigrants and their descendants would be 46 million, accounting for 30 per cent of the total population in 2050.

Scenario V

This scenario keeps the ratio of the working-age population to the retired-age population at its 1995 level of 4.8. In order to keep this level of potential support ratio, the country would need 553 million immigrants during 1995 through 2050, or an average of 10 million immigrants per year. Under this scenario, the population of Japan is projected to be 818 million in 2050 and 87 per cent of them would be the post-1995 immigrants and their descendants.

Discussion

The population of Japan aged faster between 1950 and 2000 than the populations of other developed countries due to a rapid process of demographic change, i.e., declines in fertility and increases in survivorship. Under the assumption of zero immigration in the future, the total population as well as the working-age population of Japan is projected to decline continuously during most of the first half of the twenty-first century. Scenario III examined above suggests that, if the loss of population were to be prevented through immigration, 17.7 per cent of the population would be immigrants and their descendants by 2050. Similarly, 30.4 per cent of the population would be immigrants and their descendants by 2050, if the country wishes to maintain the size of working-age population constant. In comparison, the proportion of foreigners among the total population is barely one per cent today. Figure IV.10 shows, for scenarios I, II, III and IV, the population of Japan in 2050, indicating the share that are post-1995 migrants and their descendants.

Furthermore, if the potential support ratio were to be kept constant at the 1995 level, 553 million immigrants, or more than four times as large as the current population of the country, would be needed from 1995 through 2050. In addition, 87 per cent of the resulting population in 2050 would be immigrants and their descendants. These unlikely results suggest that substantial ageing of the population, in terms of decline of potential support ratio, is inevitable even if Japan increased immigration greatly.

In absence of migration, the figures show that it would be necessary to raise the upper limit of the working-age to about 77 years in order to obtain in 2050 the same potential support ratio observed in 1995 in Japan, i.e. 4.8 persons of working-age per each older person past working-age.

TABLE IV.15. POPULATION INDICATORS FOR JAPAN BY PERIOD FOR EACH SCENARIO

Scenario / *Period*	*I* *Medium variant*	*II* *Medium variant with zero migration*	*III* *Constant total population*	*IV* *Constant age group 15-64*	*V* *Constant ratio 15-64/65 years or older*
			A. Average annual number of migrants (thousands)		
1995-2000	0	0	0	231	5 990
2000-2025	0	0	221	615	5 183
2025-2050	0	0	464	679	15 758
2000-2050	0	0	343	647	10 471
1995-2050	0	0	312	609	10 064
			B. Total number of migrants (thousands)		
1995-2000	0	0	0	1 155	29 950
2000-2025	0	0	5 535	15 366	129 587
2025-2050	0	0	11 606	16 965	393 957
2000-2050	0	0	17 141	32 332	523 543
1995-2050	0	0	17 141	33 487	553 495
			C. Total population (thousands)		
1950	83 625	-	-	-	-
1975	111 524	-	-	-	-
1995	125 472	-	-	-	-
2000	126 714	126 714	126 714	127 923	158 061
2025	121 150	121 150	127 457	141 877	323 376
2050	104 921	104 921	127 457	150 697	817 965
			D. Age group 0-14 (thousands)		
1950	29 643	-	-	-	-
1975	27 109	-	-	-	-
1995	20 019	-	-	-	-
2000	18 765	18 765	18 765	19 078	26 888
2025	16 349	16 349	17 994	21 065	60 256
2050	14 511	14 511	19 297	23 619	170 785
			E. Age group 15-64 (thousands)		
1950	49 847	-	-	-	-
1975	75 625	-	-	-	-
1995	87 188	-	-	-	-
2000	86 335	86 335	86 335	87 188	108 454
2025	72 418	72 418	76 803	87 188	217 547
2050	57 087	57 087	72 908	87 188	535 088
			F. Age group 65+ (thousands)		
1950	4 135	-	-	-	-
1975	8 790	-	-	-	-
1995	18 264	-	-	-	-
2000	21 614	21 614	21 614	21 657	22 719
2025	32 383	32 383	32 660	33 624	45 572
2050	33 323	33 323	35 253	39 890	112 092
			G. Potential support ratio 15-4/65+		
1950	12.05	-	-	-	-
1975	8.60	-	-	-	-
1995	4.77	-	-	-	-
2000	3.99	3.99	3.99	4.03	4.77
2025	2.24	2.24	2.35	2.59	4.77
2050	1.71	1.71	2.07	2.19	4.77

JAPAN

Figure IV.9. Age-sex structures by scenario for 2000, 2025 and 2050
(*Population in millions*)

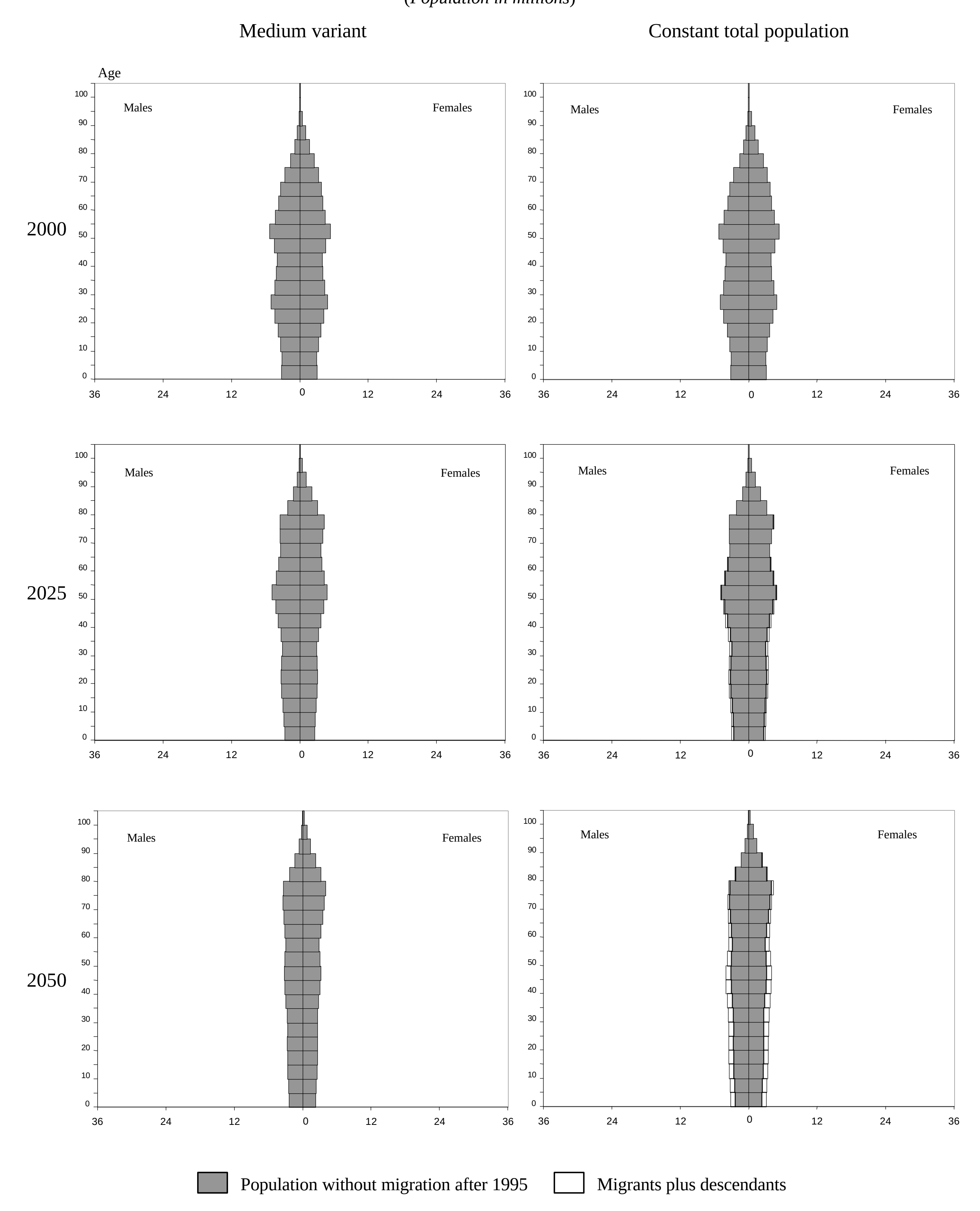


Figure IV.9 (continued)

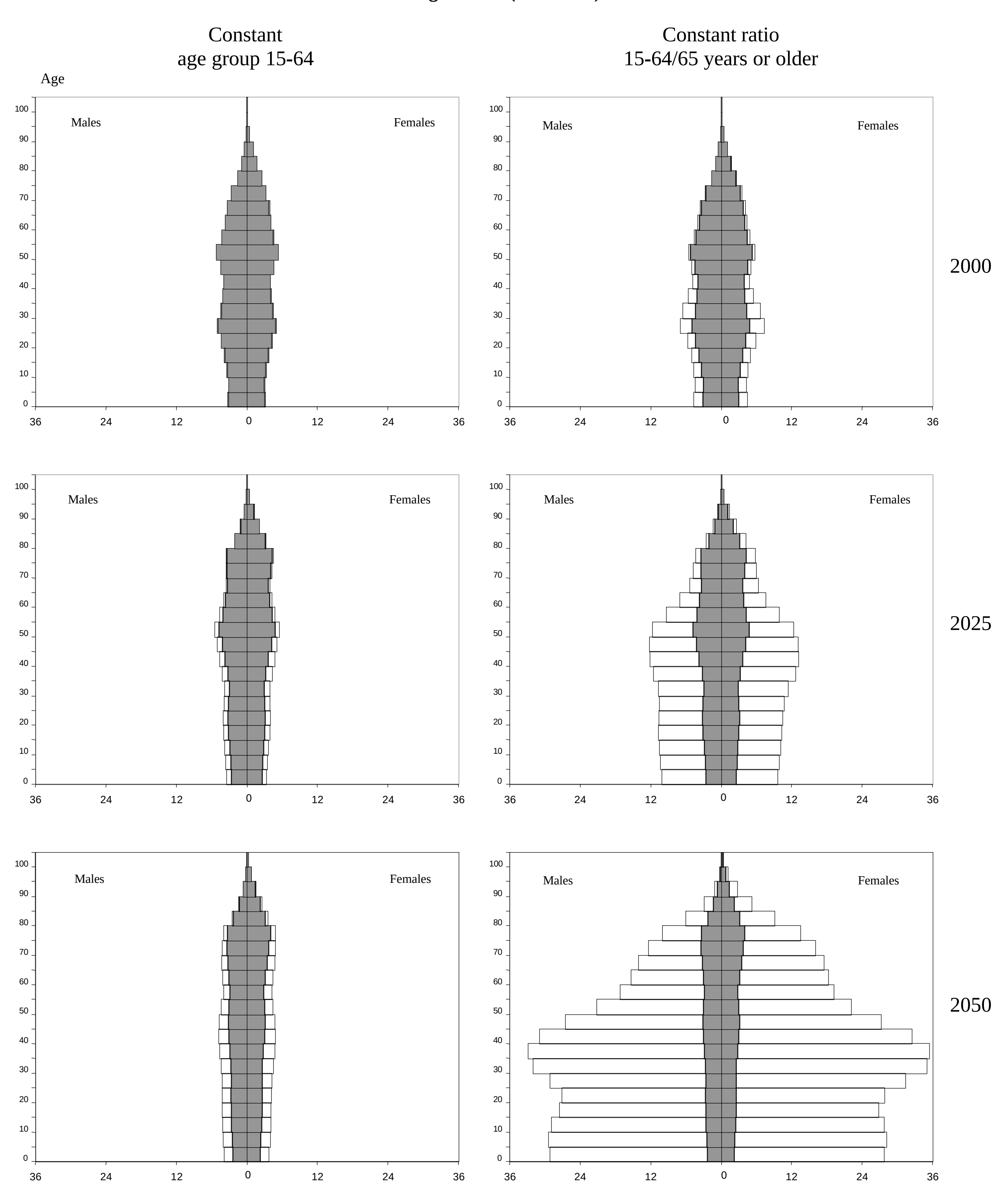
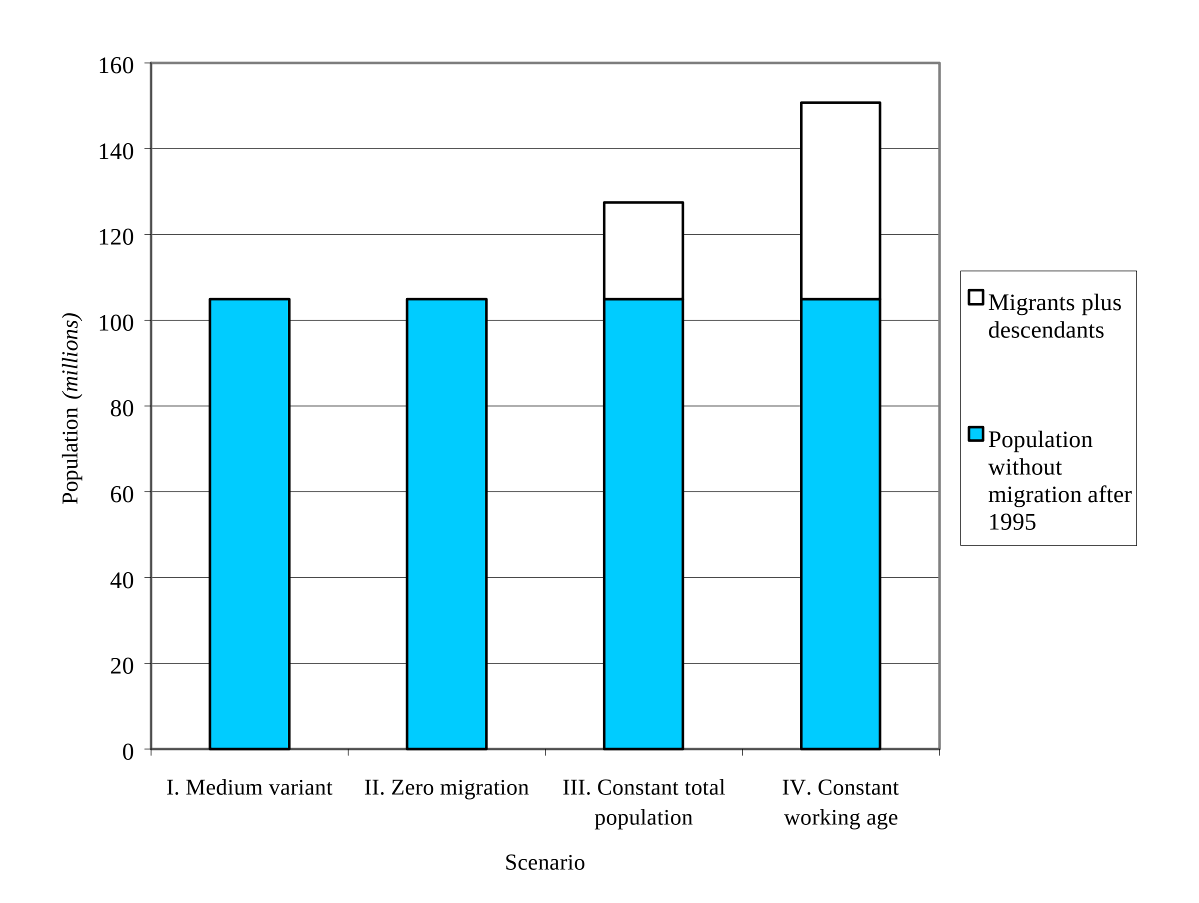


Figure IV.10. Population of Japan in 2050, indicating those who are post-1995 migrants and their descendants, by scenario



REPUBLIC OF KOREA

Past trends

The total fertility rate in the Republic of Korea increased from 5.40 births per woman in 1950-1955 to 6.33 births in 1955-1960, because of the baby boom that followed immediately after the Korean War. However, the total fertility of the country showed a sharp decline thereafter, down to 4.28 births in 1970-1975, to 2.50 births in 1980-1985 and to 1.70 births in 1990-1995. Due to significant declines of mortality over time, life expectancy at birth, for both sexes combined, increased from 47.5 years in 1950-1955 to 70.9 years in 1990-1995. The proportion of the elderly (aged 65 or older) in the total population remained between 3.0 and 4.0 per cent between 1950 and 1980, and started increasing slowly thereafter, to 5.6 per cent by 1995. The potential support ratio of the country dropped from 18.4 to 12.6 between 1950 and 1995.

Scenario I

Historically, the Republic of Korea has been until recently a country of emigration. The medium variant of the United Nations *1998 Revision* assumes a net total of 450,000 emigrants from the country between 1995 and 2020 and none thereafter. Thus, it is projected that the population of the country would increase from 44.9 million in 1995 to 53.0 million in 2035, and then decline to 51.3 million 2050 (The results of the 1998 United Nations projections are shown in the annex tables.) The working-age population of the country is projected to increase from 31.9 million in 1995 to 36.3 million in 2020, and then decrease to 30.4 million by 2050. The population aged 65 or older would continue to increase rapidly between 1995 and 2050, from 2.5 million to 12.7 million. As a result of these changes, the potential support ratio in the country would drop extremely rapidly, passing from 12.6 in 1995 to 5.7 in 2020 and to 2.4 in 2050.

Scenario II

Scenario II assumes that the population in the Republic of Korea would change according to fertility and mortality assumptions of the medium variant of the United Nations *1998 Revision*, but with net zero migration from 1995 through 2050. This scenario yields results very similar to those of scenario I. The total population of the country would keep growing from 44.9 million in 1995 to 53.5 million in 2035, and then decrease to 51.8 million in 2050. The size of the population aged 15-64 would peak at 36.6 million in 2020, rising from 31.9 million in 1995. Then, it would decline to 30.7 million in 2050. The population aged 65 years or older is projected to grow five-fold, from 2.5 million in 1995 to 12.8 million in 2050. As in scenario I, the potential support ratio of the country would drop extremely rapidly from 12.6 in 1995 to 2.4 in 2050.

Scenario III

If there were no migration after 1995, the population of the Republic of Korea would reach a maximum in 2035 at 53.5 million. In order to keep the size of the total population constant at that level thereafter, it would be necessary to have 1.5 million net immigrants between 2035 and 2050, or an average of 100,000 per year during that period. By 2050, out of a total population of 53.5 million, 1.7 million or 3.2 per cent, would be immigrants and their descendants.

Scenario IV

In order to keep the size of the working age population (15-64 years old) constant at its maximum of 36.6 million in 2020, the Republic of Korea would need a total of 6.4 million immigrants between 2020 and 2050, or an average of 213,000 per year. By 2050, out of a total population of 60.1 million, 8.4 million, or 13.9 per cent, would be post-1995 immigrants and their descendants.

Scenario V

In order to keep the ratio of the working-age population to the population aged 65 years or older at its 1995 level of 12.6, it would be necessary to have a total of 5.1 billion immigrants from 1995 through 2050, or an average of 94 million per year. This number is enormous because the initial level of the potential support ratio, 12.6, is relatively high. Under this scenario, the total population of the country is projected to be 6.2 billion in 2050, of which over 99 per cent would be post-1995 immigrants and their descendants.

Discussion

The pace of population aging in the Republic of Korea is projected to be one of the fastest in the world. With zero immigration in the future, the proportion aged 65 or older in the total population would increase from 5.6 per cent to 24.7 per cent between 1995 and 2050. The proportion of elderly would be 24.0 per cent in 2050, only slightly smaller, if immigration kept the size of the total population constant at its maximum in 2035. Similarly, the proportion of elderly would be 22.1 per cent, if the size of the working-age population remained at its maximum in 2020. Thus, under these scenarios, the impact of immigration on population ageing in the country would be minimal. Figure IV.12 shows, for scenarios I, II, III and IV, the population of the Republic of Korea in 2050, indicating the share that are post-1995 migrants and their descendants.

The number of immigrants needed to maintain the potential support ratio at its 1995 level (scenario V) is 110 times the size of the current national population, and equal approximately to the current total population of the world. This extreme result indicates that the 1995 level of the potential support ratio is transitional and will be considerably lower in the future, irrespective of migration flows.

In absence of migration, the figures show that it would be necessary to raise the upper limit of the working-age to about 82 years in order to obtain in 2050 the same potential support ratio observed in 1995 in the Republic of Korea, i.e. 12.6 persons of working-age per each person aged 65 years or older.

TABLE IV.16. POPULATION INDICATORS FOR REPUBLIC OF KOREA BY PERIOD FOR EACH SCENARIO

Scenario	*I*	*II*	*III*	*IV*	*V*
Period	*Medium Variant*	*Medium variant with zero migration*	*Constant total population*	*Constant age group 15-64*	*Constant ratio 15-64/65 years or older*
		A. Average annual number of migrants (thousands)			
1995-2000	-20	0	0	0	4 156
2000-2025	-14	0	0	41	15 151
2025-2050	0	0	60	216	189 975
2000-2050	-7	0	30	129	102 563
1995-2050	-8	0	27	117	93 617
		B. Total number of migrants (thousands)			
1995-2000	-100	0	0	0	20 780
2000-2025	-350	0	0	1 034	378 765
2025-2050	0	0	1 509	5 392	4 749 382
2000-2050	-350	0	1 509	6 426	5 128 147
1995-2050	-450	0	1 509	6 426	5 148 928
		C. Total population (thousands)			
1950	20 357	-	-	-	-
1975	35 281	-	-	-	-
1995	44 949	-	-	-	-
2000	46 844	46 946	46 946	46 946	68 768
2025	52 533	53 020	53 020	54 119	522 908
2050	51 275	51 751	53 470	60 125	6 233 275
		D. Age group 0-14 (thousands)			
1950	8 479	-	-	-	-
1975	13 318	-	-	-	-
1995	10 540	-	-	-	-
2000	10 068	10 091	10 091	10 091	15 886
2025	8 956	9 040	9 040	9 338	128 197
2050	8 209	8 285	8 752	10 205	1 571 113
		E. Age group 15-64 (thousands)			
1950	11 257	-	-	-	-
1975	20 690	-	-	-	-
1995	31 882	-	-	-	-
2000	33 623	33 696	33 696	33 696	48 998
2025	35 557	35 886	35 886	36 649	365 720
2050	30 401	30 685	31 867	36 649	4 319 740
		F. Age group 65+ (thousands)			
1950	620	-	-	-	-
1975	1 273	-	-	-	-
1995	2 527	-	-	-	-
2000	3 152	3 159	3 159	3 159	3 884
2025	8 020	8 094	8 094	8 131	28 990
2050	12 665	12 781	12 851	13 270	342 421
		G. Potential support ratio 15-64/65+			
1950	18.16	-	-	-	-
1975	16.25	-	-	-	-
1995	12.62	-	-	-	-
2000	10.67	10.67	10.67	10.67	12.62
2025	4.43	4.43	4.43	4.51	12.62
2050	2.40	2.40	2.48	2.76	12.62

REPUBLIC OF KOREA

Figure IV.11. Age-sex structures by scenario for 2000, 2025 and 2050
(*Population in millions*)

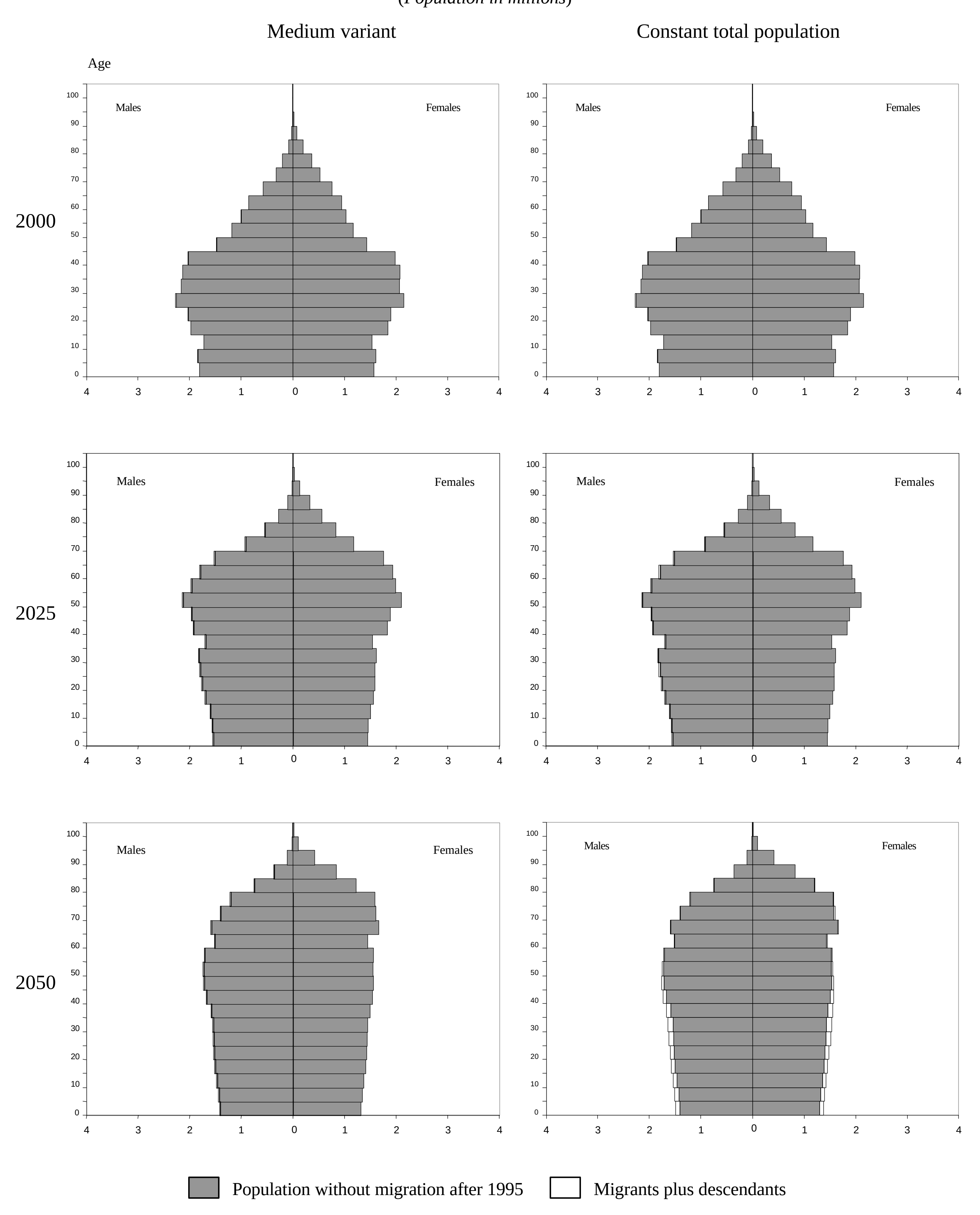
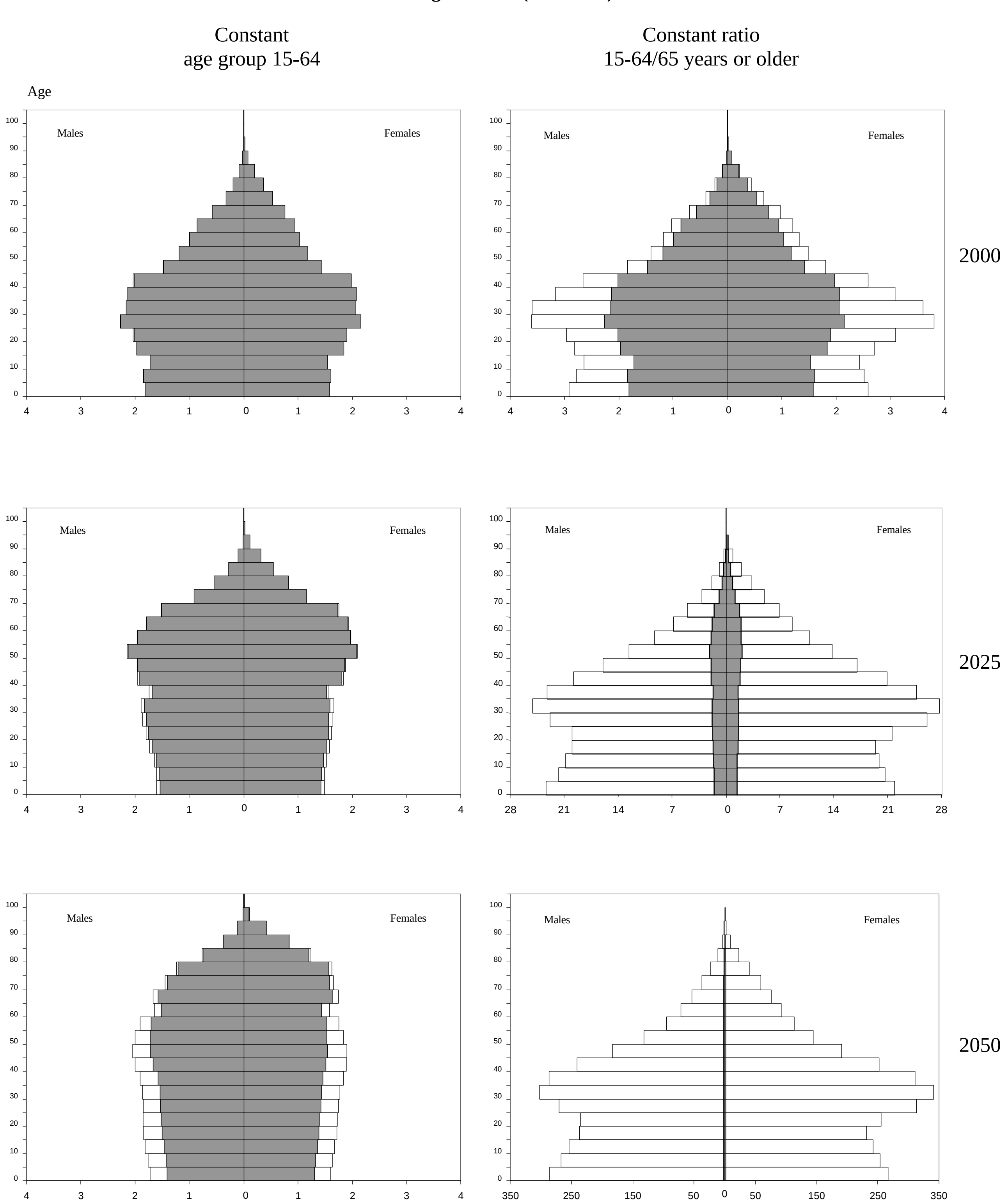
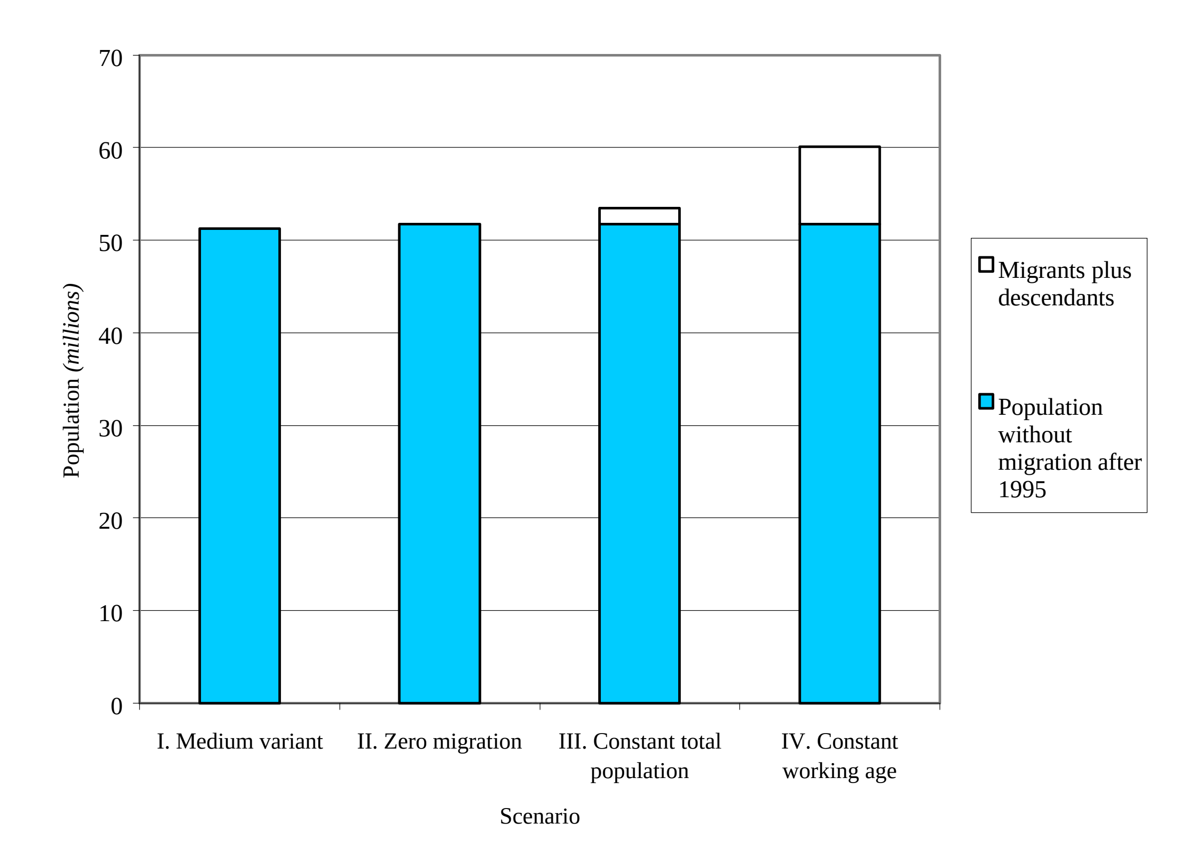


Figure IV.11 (continued)



NOTE: For the constant ratio scenario, the age-sex structures in 2025 and 2050 have different scales from the other scenarios.


Figure IV.12. Population of the Republic of Korea in 2050, indicating those who are post-1995 migrants and their descendants, by scenario



NOTE: The population in scenario I is slightly smaller than in scenario II because of net out migration.

RUSSIAN FEDERATION

Past trends

At a total fertility rate of 2.51 children per woman, Russian fertility in 1950-1955 was only slightly higher than the average fertility in Western Europe and in Northern Europe. Its life expectancy at birth of 67.3 years in 1950-1955 was similar to the average for Western Europe. Fertility stayed above replacement levels until 1965, but dropped to 1.50 children per woman in 1990-1995, and 1.35 in 1995-2000. Mortality levels have stagnated, or increased over much of the period since 1965, especially among adult males. As a result, the 1995-2000 life expectancy at birth of 66.6 years is lower than the 1950-1955 level. Nevertheless, the proportion of the population aged 65 years or older increased from 6 per cent in 1950 to 12 per cent in 1995. The share of the population aged 15 to 64 years has also increased slightly from 65 per cent in 1950 to 67 per cent in 1995. The potential support ratio, which was 10 persons aged 15-64 years for each person aged 65 or older in 1950, has declined to 6 in 1995.

Scenario I

This scenario, which is the medium variant of the United Nations *1998 Revision*, assumes that there will be 7.4 million net migrants into the Russian Federation between 1995 and 2050: 2.0 million from 1995 to 2000, 4.1 million from 2000 to 2025 and 1.4 million from 2025 to 2050. Because of its low fertility, the population of the Russian Federation is projected to decline from 148.1 million in 1995 to 121.3 million in 2050. By 2050, 6 per cent of the total population would be post-1995 migrants or their descendants (The results of the 1998 United Nations projections are shown in the annex tables). The population aged 15-64 would increase slightly from 99.2 million in 1995 to 103.0 million in 2010, and then decline to 73.6 million by 2050. One-quarter of the population of the Russian Federation in 2050 would be aged 65 years or older. Because of the unevenness of the age structure, the potential support ratio will decrease from its level of 6 in 1995 to 5.0 in 2005 and increase again after 2005 to 6 in 2010. After 2010, the potential support ratio will decline by more than half, to 2 by 2050.

Scenario II

Scenario II uses the fertility and mortality assumptions of the medium variant of the United Nations *1998 Revision*, but assumes zero migration after 1995. Under these conditions, the population of the Russian Federation would decline faster than in Scenario I. There will be 114.2 million people in 2050, 7.1 million fewer than in Scenario I. The number of persons aged 15-64 is also projected to start declining 5 years earlier than under Scenario I, from 100.5 million in 2000 to 69.2 million in 2050. However, the share of the total population above age 65 will still be about 25 per cent in 2050, and the potential support ratio would be 2 in that year.

Scenario III

Scenario III holds the population of Russia constant at its 1995 size of 148.1 million, preventing it from declining further. In order to do so, 25 million net migrants would be needed between 2000 and 2050, an average of 500,000 immigrants per year. By 2050, out of a total population of 148.1 million, 33.9 million or 23 per cent would be post-1995 immigrants or their descendants. By 2050 the potential support ratio would be 3.

Scenario IV

Scenario IV keeps the size of the population aged 15-64 constant at its maximum of 100.5 million, reached in 2000. To attain this, a total of 36 million net migrants would be needed from 2000 to 2050. The average net migration would need to be 91,000 per year between 2000 and 2010, and 871,000 per year between 2010 and 2050. This scenario would result in a total population of 158 million in 2050, of which 43.8 million, or 28 per cent, would consist of post-1995 immigrants or their descendants. The potential support ratio in 2050 would be 3.

Scenario V

This scenario keeps the potential support ratio at its 1995 value of 5.62. The total number of net immigrants needed would be 253 million between 2000 and 2050, an overall average of 5.1 million per year. However, the average annual net migration required to maintain this ratio varies considerably over time, as two relatively small cohorts—those born between 1940 and 1945 and those born between 1965 and 1970—pass through their economically active years and into the 65 years or older group. In the period 2005-2010, the sharp decline in the number of persons aged 65 or older would require emigration of some 3.6 million persons per year to keep the potential support ratio constant. Immigration would then resume after 2010. Under this scenario, by 2050, 308 million persons, or 73 per cent of Russia's projected population of 422 million would be made up of post-1995 immigrants or their descendants.

Discussion

Between 1990 and 1995 international migration had a major impact on population growth in the Russian Federation. An estimated 1.8 million persons migrated into Russia in this period, an average of 360,000 per year. While this volume of migration is comparable to the average levels required under scenarios I and III, it is much lower than the 871,000 persons that would be needed annually between 2010 and 2050 under scenario IV. It is important to note also, that a large proportion of recent immigration into the Russian Federation has been the result of resettling of ethnic Russians who had come from the other republics of the former Soviet Union. Figure IV.14 shows, for scenarios I, II, III and IV, the population of the Russian Federation in 2050, indicating the share that are post-1995 migrants and their descendants.

The numbers of immigrants required in scenario V is immensely larger than past experience, more than 13 times the level recorded in 1990-1995.

In absence of migration, the figures show that it would be necessary to raise the upper limit of the working-age to about 73 years in order to obtain in 2050 the same potential support ratio observed in 1995 in the Russian Federation, i.e., 5.6 persons of working-age per each older person past working-age.

TABLE IV.17. POPULATION INDICATORS FOR RUSSIAN FEDERATION BY PERIOD FOR EACH SCENARIO

Scenario	*I*	*II*	*III*	*IV*	*V*
Period	*Medium Variant*	*Medium variant with zero migration*	*Constant total population*	*Constant age group 15-64*	*Constant ratio 15-64/65 years or older*
			A. Average annual number of migrants (thousands)		
1995-2000	394	0	611	0	746
2000-2025	163	0	445	638	3 481
2025-2050	55	0	551	792	6 654
2000-2050	109	0	498	715	5 068
1995-2050	135	0	508	650	4 675
			B. Total number of migrants (thousands)		
1995-2000	1 970	0	3 056	0	3 731
2000-2025	4 084	0	11 120	15 951	87 021
2025-2050	1 364	0	13 776	19 805	166 358
2000-2050	5 448	0	24 896	35 756	253 379
1995-2050	7 417	0	27 952	35 756	257 110
			C. Total population (thousands)		
1950	102 192	-	-	-	-
1975	134 233	-	-	-	-
1995	148 097	-	-	-	-
2000	146 934	144 960	148 097	144 960	148 790
2025	137 933	131 824	148 097	149 479	231 075
2050	121 256	114 248	148 097	158 049	422 094
			D. Age group 0-14 (thousands)		
1950	29 542	-	-	-	-
1975	31 280	-	-	-	-
1995	31 232	-	-	-	-
2000	26 679	26 244	27 040	26 244	27 216
2025	20 923	19 905	23 285	24 131	43 641
2050	17 372	16 298	22 719	25 011	80 051
			E. Age group 15-64 (thousands)		
1950	66 328	-	-	-	-
1975	91 069	-	-	-	-
1995	99 200	-	-	-	-
2000	101 862	100 467	102 703	100 467	103 197
2025	92 021	87 764	99 805	100 467	159 103
2050	73 569	69 199	92 540	100 467	290 343
			F. Age group 65+ (thousands)		
1950	6 322	-	-	-	-
1975	11 883	-	-	-	-
1995	17 664	-	-	-	-
2000	18 393	18 249	18 353	18 249	18 376
2025	24 989	24 156	25 006	24 881	28 331
2050	30 315	28 750	32 837	32 571	51 701
			G. Potential support ratio 15-64/65+		
1950	10.49	-	-	-	-
1975	7.66	-	-	-	-
1995	5.62	-	-	-	-
2000	5.54	5.51	5.60	5.51	5.62
2025	3.68	3.63	3.99	4.04	5.62
2050	2.43	2.41	2.82	3.08	5.62

RUSSIAN FEDERATION

Figure IV.13. Age-sex structures by scenario for 2000, 2025 and 2050
(*Population in millions*)

Medium variant | Constant total population

2000

2025

2050

Population without migration after 1995 | Migrants plus descendants

Figure IV.13 (continued)

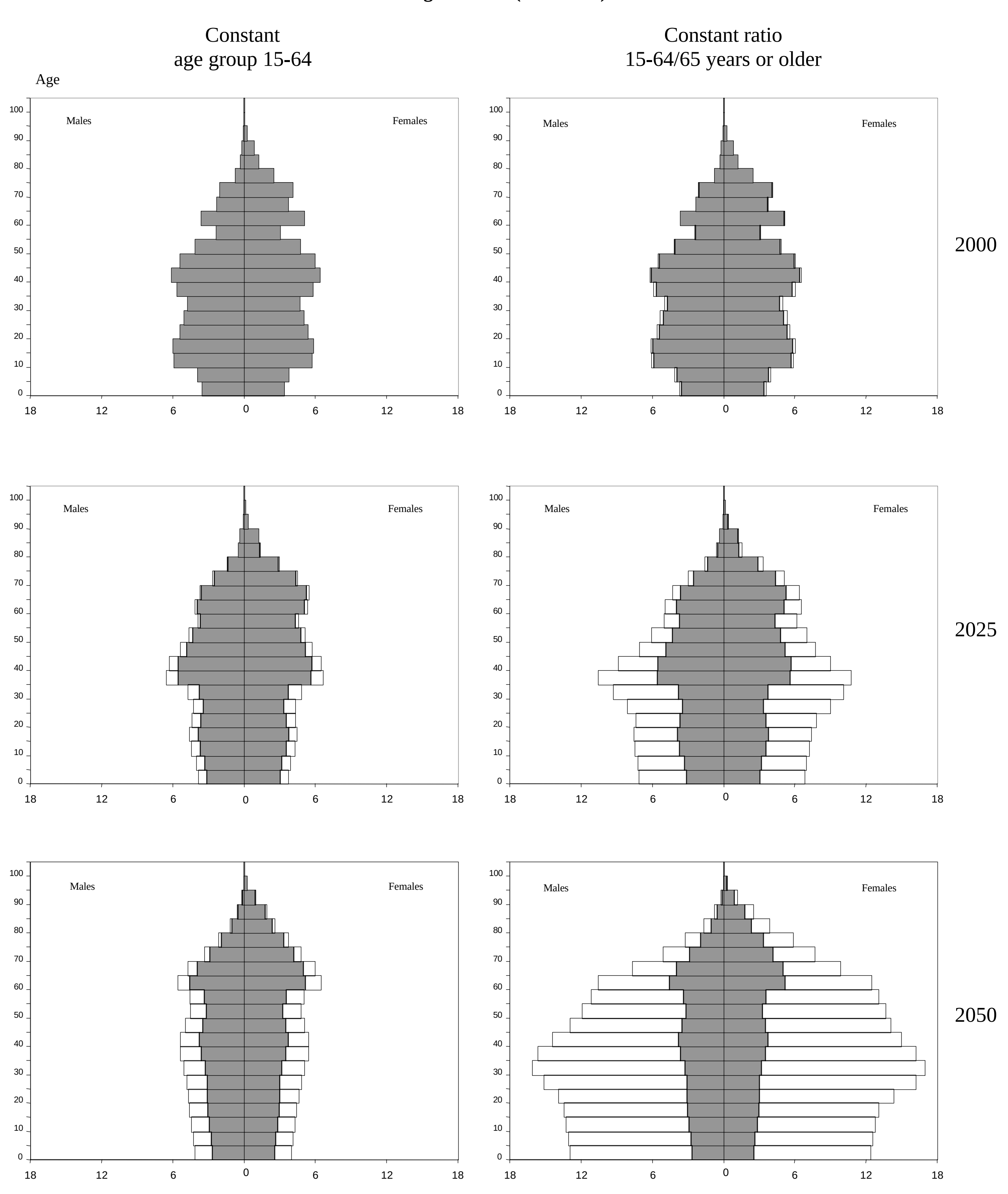
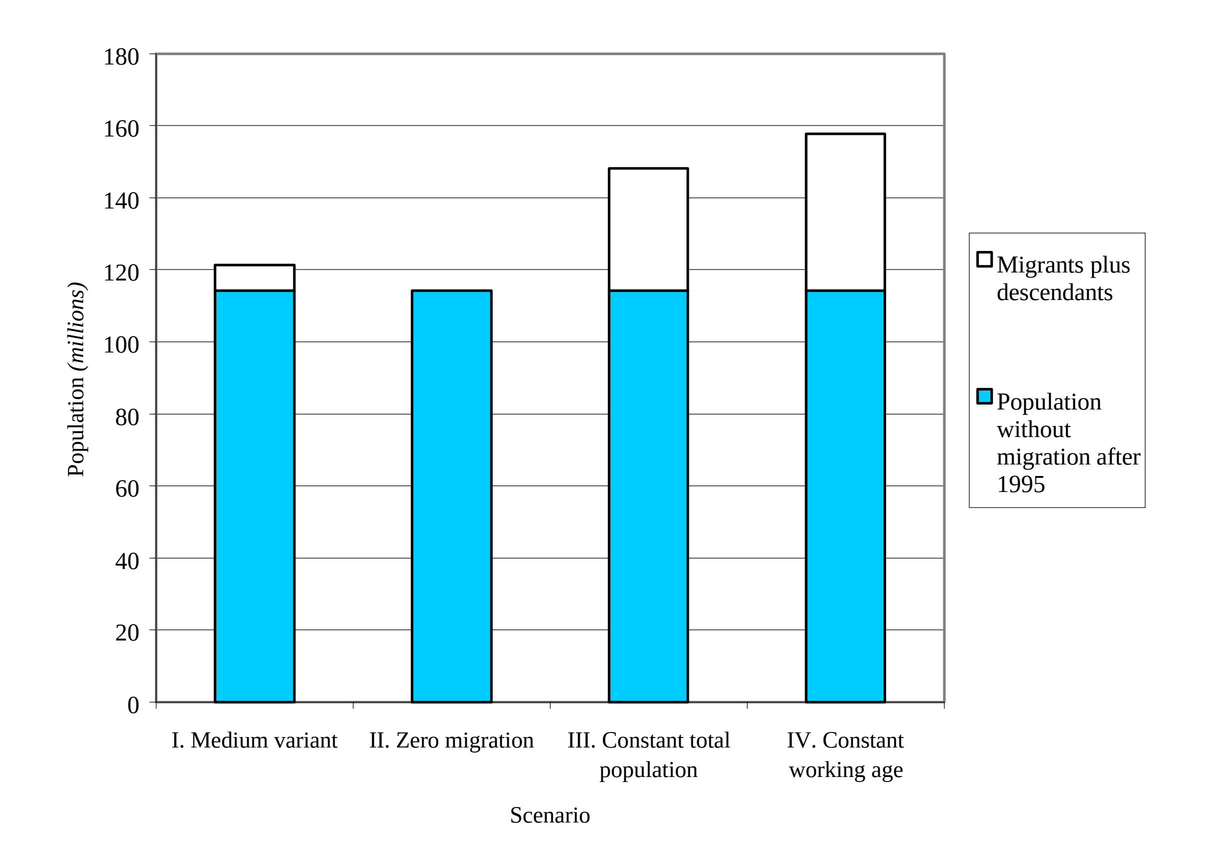



Figure IV.14. Population of the Russian Federation in 2050, indicating those who are post-1995 migrants and their descendants, by scenario



UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND

Past trends

Whereas the total fertility rate increased steadily from the 1950's level of 2.18 children per woman to 2.81 in 1960-1965, this trend reversed in the decades afterwards, and fertility fell continuously to 1.78 in 1990-1995. At the same time, life expectancy increased during the entire period of 1950-1995 from 69.2 to 76.2 years for both sexes. Hence, the proportion of the population aged 65 years or older increased over the same period of time from 10.7 per cent to 15.9 per cent.

At the beginning of the 20th century, at a time when both fertility and mortality were higher, the potential support ratio was 13.3 persons aged 15-64 for each person aged 65 or older. The ratio had declined to 6.2 in 1950, and declined further to 4.1 in 1995.

Scenario I

Scenario I, which is the medium variant of the 1998 United Nations projections, assumes a total of 1.2 million net migrants between 1995 and 2050. From 1995 to 2025, 40,000 persons would enter Britain annually and none after 2025. The overall population of the United Kingdom would increase from 58.3 million in 1995 to 59.9 million in 2025 and thereafter decline to 56.6 million in 2050 (The results of the 1998 United Nations projections are shown in the annex tables). The population in working-age, aged 15-64 years, would increase from 37.8 million in 1995 to 39.2 million in 2010; afterwards there would be a continuous decline to 33.4 million in 2050. By that date 1.9 per cent of the total population would be post-1995 migrants or their descendants. The population aged 65 or over, on the other hand, would increase from 9.2 million (15.9 per cent) to 14.1 million in 2050 (24.9 per cent) in 2050. As a result, the potential support ratio would drop from 4.09 in 1995 to 2.37 in 2050.

Scenario II

Scenario II, which is the medium variant with zero migration, is based on the fertility and mortality assumptions of the medium variant of the 1998 United Nations projections, but without any migration to the United Kingdom after 1995. The overall population would decrease to 55.6 million in 2050, one million less than in scenario I; the population aged 15-64 years would decrease to 32.7 million, 700,000 less than in scenario I. The elderly population (aged 65 or older) would increase to 13.9 million in 2050 and the potential support ratio would be at 2.36. In general, there are only slight differences between scenarios I and II regarding the population trends of the country.

Scenario III

Scenario III keeps the population in the United Kingdom constant at its maximum of 58.8 million people in 2020. In order to do so, the United Kingdom would have to receive 2.6 million migrants between 2020 and 2050. In 2050, 5.5 per cent of the total population would be post-1995 migrants or their descendants. This influx would result in a population of labour-force age of 35 million in 2050, and the population aged 65 or older would reach 14 million in 2050, 24 per cent of the total population. The potential support ratio would be 2.5.

Scenario IV

Scenario IV keeps the age group between 15-64 years constant at its maximum of 38.9 million from 2010 on. In order to do that a total of 6.2 million immigrants would be needed between 2010 and 2050, which would increase the overall population to 64.3 million in 2050. By that date 13.6 per cent of the total population would be post-1995 migrants or their descendants. The proportion of the elderly would be 22.9 per cent, and the potential support ratio 2.6 in 2050.

Scenario V

Scenario V keeps the potential support ratio at its 1995 level of 4.09. Keeping this ratio would require 59.8 million migrants between 1995 and 2050, slightly more than one million migrants a year on average. The overall population would reach 136 million in 2050, of which 80 million (59 per cent) would be post-1995 migrants or their descendants.

Discussion

Net migration in the United Kingdom amounted to 660,000 persons between 1990 and 1998, an average of 73,000 persons per year. In 1990, the proportion of the total population who were foreign-born was 6.5 per cent. This is comparable to the numbers needed to keeping the total population constant, 88,000 migrants per year, and to the proportion of the total population in 2050 who would be post-1995 migrants or their descendants, 5.5 per cent. However, the numbers of migrants needed to keep the population in working-age constant are about twice the level of the past decade. Figure IV.16 shows, for scenarios I, II, III and IV, the population of the United Kingdom in 2050, indicating the share that are post-1995 migrants and their descendants. Scenario V, keeping the potential support ratio constant, would demand more than one million immigrants annually. This would greatly exceed immigration rates that the country experienced in the past.

In absence of migration, the figures show that it would be necessary to raise the upper limit of the working-age to about 72 years in order to obtain in 2050 the same potential support ratio observed in 1995 in the United Kingdom, i.e. 4.1 persons of working-age per each older person past working-age.

TABLE IV.18. POPULATION INDICATORS FOR UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND BY PERIOD FOR EACH SCENARIO

Scenario	*I*	*II*	*III*	*IV*	*V*
Period	*Medium variant*	*Medium variant with zero migration*	*Constant total population*	*Constant age group 15-64*	*Constant ratio 15-64/65 years or older*
			A. Average annual number of migrants (thousands)		
1995-2000	40	0	0	0	11
2000-2025	40	0	2	121	947
2025-2050	0	0	103	129	1 441
2000-2050	20	0	53	125	1 194
1995-2050	22	0	48	114	1 087
			B. Total number of migrants (thousands)		
1995-2000	200	0	0	0	55
2000-2025	1 000	0	61	3 025	23 687
2025-2050	0	0	2 572	3 222	36 035
2000-2050	1 000	0	2 634	6 247	59 722
1995-2050	1 200	0	2 634	6 247	59 775
			C. Total population (thousands)		
1950	50 616	-	-	-	-
1975	56 226	-	-	-	-
1995	58 308	-	-	-	-
2000	58 830	58 600	58 600	58 600	58 655
2025	59 961	58 768	58 833	62 248	86 856
2050	56 667	55 594	58 833	64 354	136 138
			D. Age group 0-14 (thousands)		
1950	11 306	-	-	-	-
1975	13 121	-	-	-	-
1995	11 241	-	-	-	-
2000	11 069	11 033	11 033	11 033	11 048
2025	10 071	9 872	9 890	10 796	17 174
2050	9 153	8 968	9 775	10 759	26 299
			E. Age group 15-64 (thousands)		
1950	33 881	-	-	-	-
1975	35 261	-	-	-	-
1995	37 811	-	-	-	-
2000	38 328	38 207	38 207	38 207	38 246
2025	37 166	36 465	36 510	38 873	55 979
2050	33 406	32 745	35 009	38 873	88 239
			F. Age group 65+ (thousands)		
1950	5 429	-	-	-	-
1975	7 844	-	-	-	-
1995	9 256	-	-	-	-
2000	9 433	9 360	9 360	9 360	9 362
2025	12 724	12 431	12 433	12 578	13 703
2050	14 107	13 881	14 048	14 722	21 600
			G. Potential support ratio 15-64/65+		
1950	6.24	-	-	-	-
1975	4.50	-	-	-	-
1995	4.09	-	-	-	-
2000	4.06	4.08	4.08	4.08	4.09
2025	2.92	2.93	2.94	3.09	4.09
2050	2.37	2.36	2.49	2.64	4.09

UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND

Figure IV.15. Age-sex structures by scenario for 2000, 2025 and 2050
(*Population in millions*)

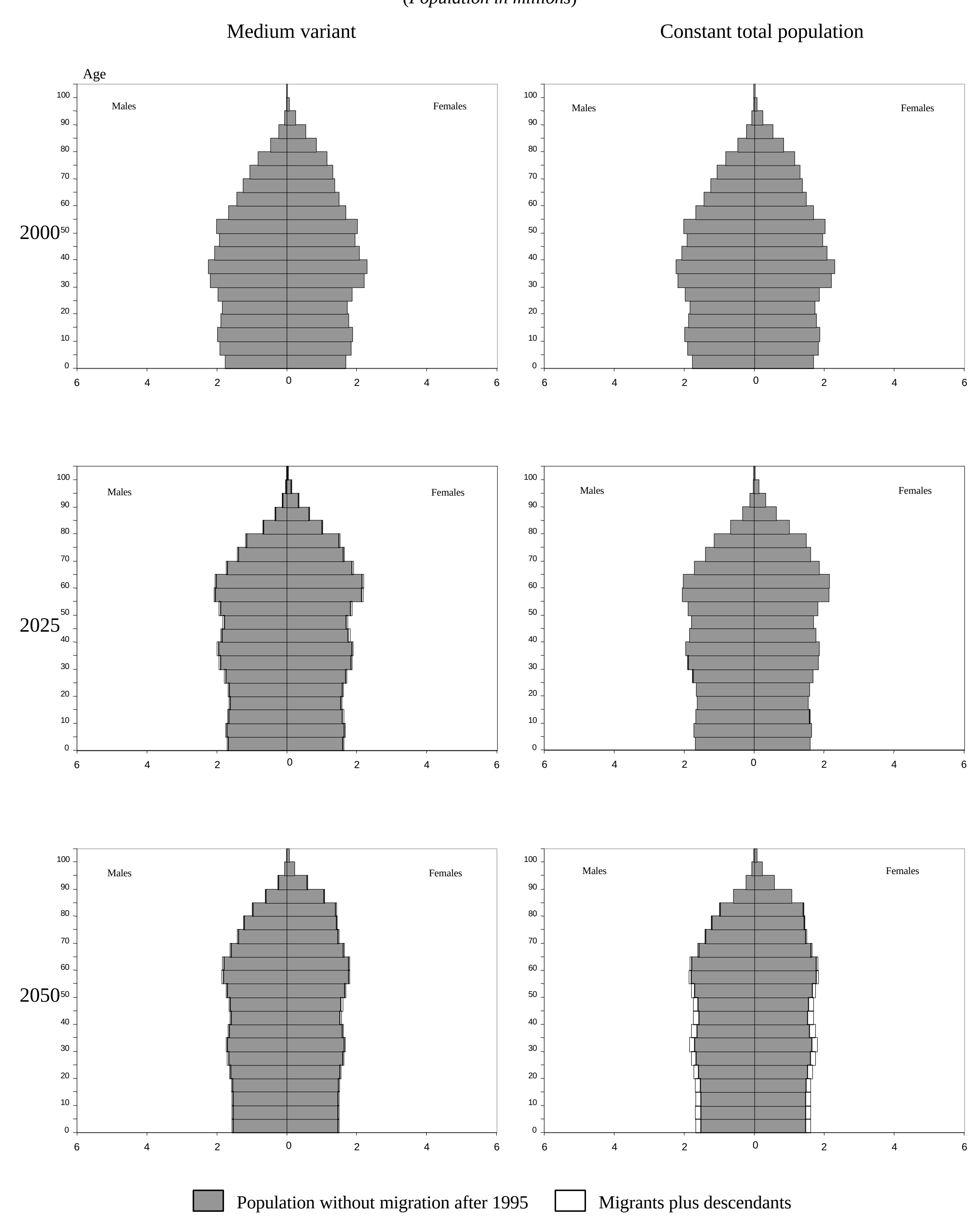


Figure IV.15 (continued)

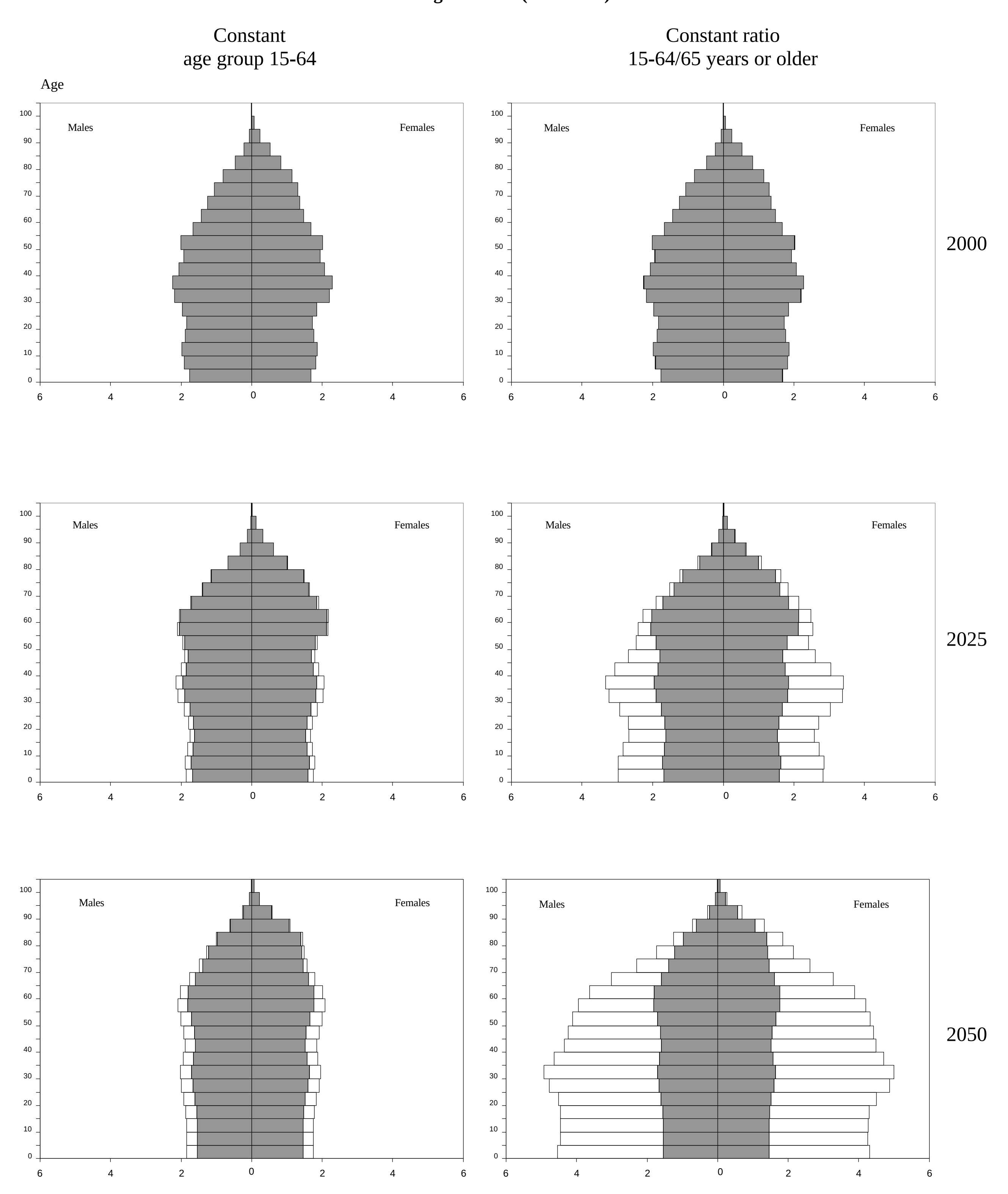
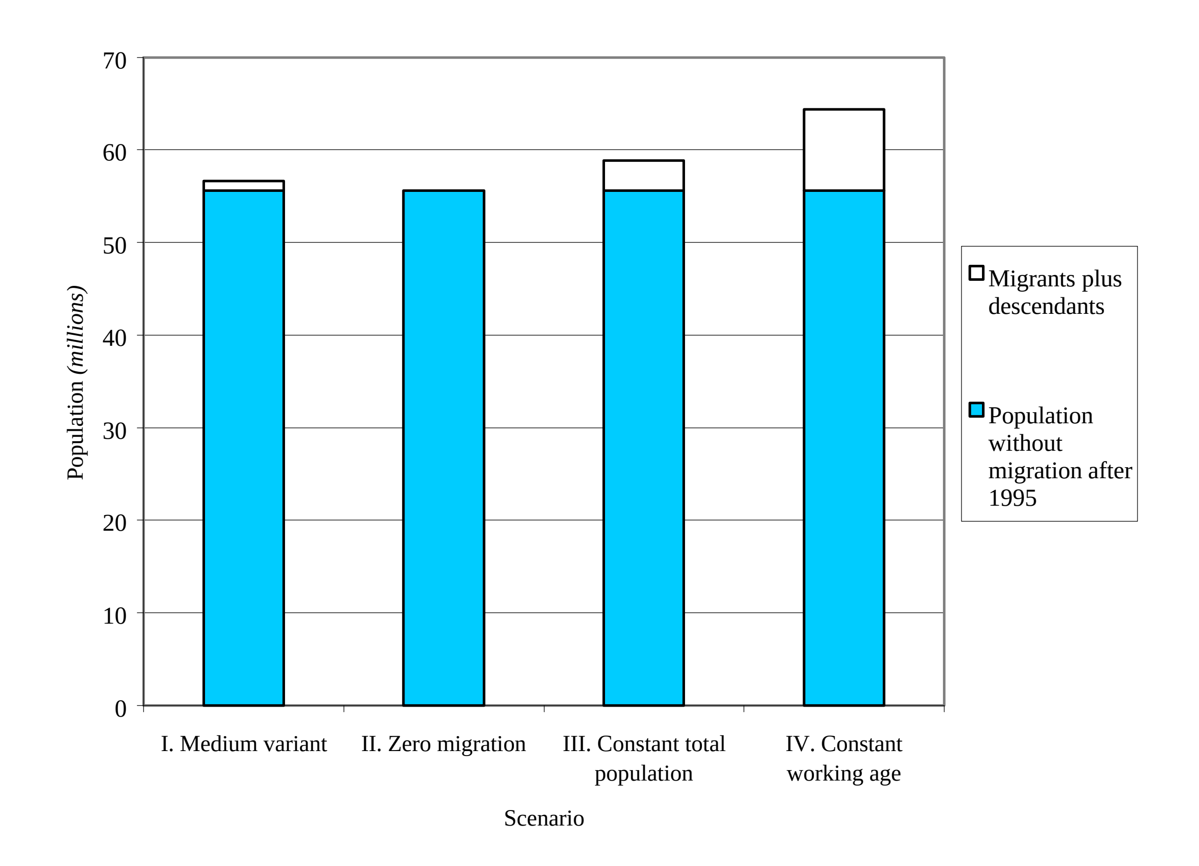




Figure IV.16. Population of the United Kingdom in 2050, indicating those who are post-1995 migrants and their descendants, by scenario



UNITED STATES OF AMERICA

Past trends

The total fertility rate in the United States dropped from 3.45 births per woman in 1950-1955 to 2.02 in 1970-1975. Except for a temporary period during the late 1970s and early 1980s (when it hovered around 1.8), the total fertility rate has continued to be around two children per woman. Life expectancy at birth, meanwhile, has risen from 69.0 years in 1950-1955 to 75.7 years in 1990-1995. As a consequence of these changes, the proportion of the population aged 65 or older has risen from 8.3 per cent in 1950 to 12.5 per cent in 1995. And the potential support ratio declined from 7.8 in 1950 to 5.2 in 1995. As a point of comparison, the potential support ratio was 15 in 1900, when 4 per cent of the population was aged 65 years or older.

Scenario I

Scenario I, the medium variant of the United Nations *1998 Revision*, assumes an annual net intake of 760,000 migrants per year between 1995-2050, for a total of 41,800,000 net migrants during the period. Accordingly, the total population of the United States is projected to increase continuously from 267 million in 1995 to 349 million in 2050 (The results of the 1998 United Nations projections are shown in the annex tables). By 2050, out of this total population of 349 million, 59 million, or 16.8 per cent would be post-1995 immigrants or their descendants. The population aged 15-64 will increase slowly from 174 million in 1995 to 214 million in 2050, although not in a monotonic fashion. The population aged 65 or older will rapidly rise from 33 million in 1995 to nearly 76 million in 2050. As a result, the potential support ratio would decrease from 5.2 in 1995 to 2.8 in 2050.

Scenario II

Scenario II, which is the medium variant with zero migration, uses the fertility and mortality assumptions of the medium variant of the *1998 Revision*, but without any migration to the United States after 1995. The results in this scenario are quite different from those of scenario I. The total population would increase to 290 million in 2050, which is 50 million less than in scenario I. The population aged 15-64 would rise from 174 million in 1995 to 192 million in 2010 and 2015 and then decline, returning back to 174 million in 2050. The population aged 65 or older would double from 33 million in 1950 to 68 million in 2050. As a result, the potential support ratio would decline to 2.6 in 2050, which is slightly below that presented in scenario I.

Scenario III

Scenario III keeps the size of the total United States population constant at its maximum of 298 million that it would reach in 2030 (assuming no in-migration after 1995). In order to keep the total population constant at that level, it would be necessary to have 6.4 million migrants between 2030 and 2050, which is an average of 319,000 migrants per year. By 2050, out of a total population of 298 million, 7.3 million, or 2.5 per cent, would be post-1995 immigrants or their descendants.

Scenario IV

Scenario IV keeps the size of the population aged 15 to 64 constant at its maximum of 192.5 million that it would reach in 2015 (assuming no in-migration after 1995). In order to keep the working age population constant at that level, it would be necessary to have 18.0 million migrants between 2015 and 2050, which is an average of 513 thousand migrants per year. By 2050, out of a total population of 316 million, 25.0 million, or 7.9 per cent, would be post-1995 immigrants or their descendants.

Scenario V

Scenario V keeps the potential support ratio at its 1995 value of 5.2 persons aged 15-64 for each person aged 65 or older. In order to keep the potential support ratio constant at that level, it would be necessary to have 593 million immigrants from 1995 to 2050, an average of 10.8 million per year. By 2050, out of a United States total population of 1.1 billion, 775 million, or 73 per cent, would be post-1995 immigrants or their descendants.

Discussion

The official United States estimate of (documented) migrants into the United States from 1990 to 1996 is about 1.1 million per year. Thus, the past regular inflow into the United States is well above the number of migrants needed to prevent a decline in the total population or in the working-age population. Also under both scenarios III and IV, the percentage of post-1995 immigrants, and their descendants, in the total population of 2050 (2.5 per cent and 7.9 per cent, respectively) would be below the percentage of foreign-born that exists currently (9.6 per cent). Figure IV.18 shows, for scenarios I, II, III and IV, the population of the United States in 2050, indicating the share that are post-1995 migrants and their descendants.

In absence of migration, the figures show that it would be necessary to raise the upper limit of the working-age to about 74 years in order to obtain in 2050 the same potential support ratio observed in 1995 in the United States, i.e. 5.2 persons of working-age per each older person past working-age.

TABLE IV.19. POPULATION INDICATORS FOR UNITED STATES OF AMERICA BY PERIOD FOR EACH SCENARIO

Scenario	*I*	*II*	*III*	*IV*	*V*
Period	*Medium variant*	*Medium variant with zero migration*	*Constant total population*	*Constant age group 15-64*	*Constant ratio 15-64/65 years or older*
			A. Average annual number of migrants (thousands)		
1995-2000	760	0	0	0	37
2000-2025	760	0	0	431	9 394
2025-2050	760	0	255	288	14 309
2000-2050	760	0	128	359	11 851
1995-2050	760	0	116	327	10 777
			B. Total number of migrants (thousands)		
1995-2000	3 800	0	0	0	185
2000-2025	19 000	0	0	10 771	234 843
2025-2050	19 000	0	6 384	7 196	357 729
2000-2050	38 000	0	6 384	17 967	592 572
1995-2050	41 800	0	6 384	17 967	592 757
			C. Total population (thousands)		
1950	157 813	-	-	-	-
1975	220 165	-	-	-	-
1995	267 020	-	-	-	-
2000	278 357	274 335	274 335	274 335	274 531
2025	325 573	296 616	296 616	308 408	566 888
2050	349 318	290 643	297 970	315 644	1 065 174
			D. Age group 0-14 (thousands)		
1950	42 596	-	-	-	-
1975	55 424	-	-	-	-
1995	59 161	-	-	-	-
2000	59 771	58 756	58 756	58 756	58 808
2025	59 241	52 662	52 662	55 789	122 849
2050	59 724	48 075	49 984	52 984	216 127
			E. Age group 15-64 (thousands)		
1950	102 175	-	-	-	-
1975	141 706	-	-	-	-
1995	174 382	-	-	-	-
2000	183 752	180 843	180 843	180 843	180 979
2025	204 985	184 267	184 267	192 476	372 525
2050	213 695	174 607	179 699	192 476	712 305
			F. Age group 65+ (thousands)		
1950	13 043	-	-	-	-
1975	23 035	-	-	-	-
1995	33 477	-	-	-	-
2000	34 833	34 736	34 736	34 736	34 743
2025	61 347	59 687	59 687	60 143	71 515
2050	75 899	67 961	68 287	70 184	136 743
			G. Potential support ratio 15-64/65+		
1950	7.83	-	-	-	-
1975	6.15	-	-	-	-
1995	5.21	-	-	-	-
2000	5.28	5.21	5.21	5.21	5.21
2025	3.34	3.09	3.09	3.20	5.21
2050	2.82	2.57	2.63	2.74	5.21

UNITED STATES OF AMERICA

Figure IV.17. Age-sex structures by scenario for 2000, 2025 and 2050
(*Population in millions*)

Medium variant | Constant total population

Age

2000

2025

2050

Males | Females

0 5 15 25 35 45

Population without migration after 1995

Migrants plus descendants

Figure IV.17 (continued)

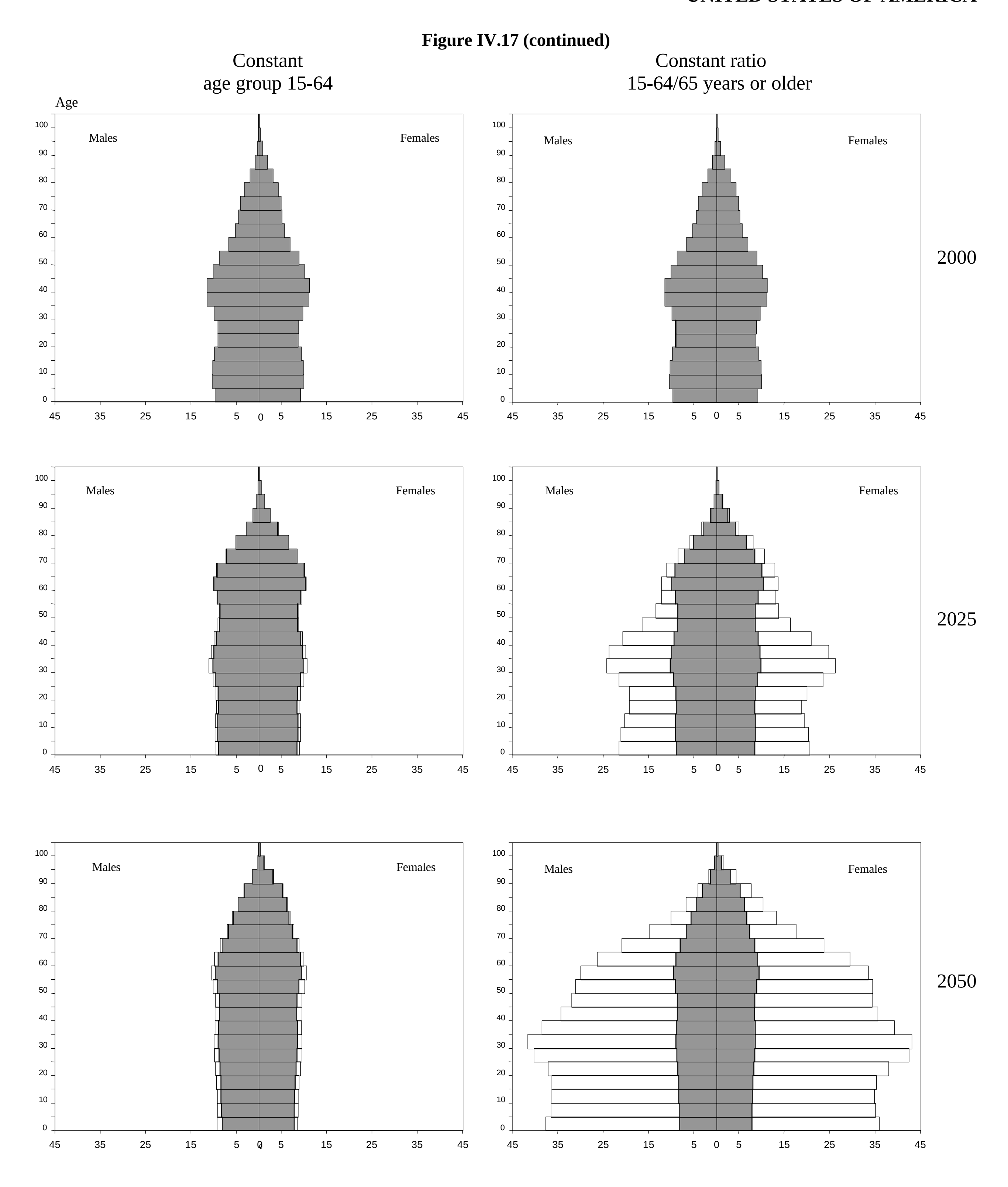
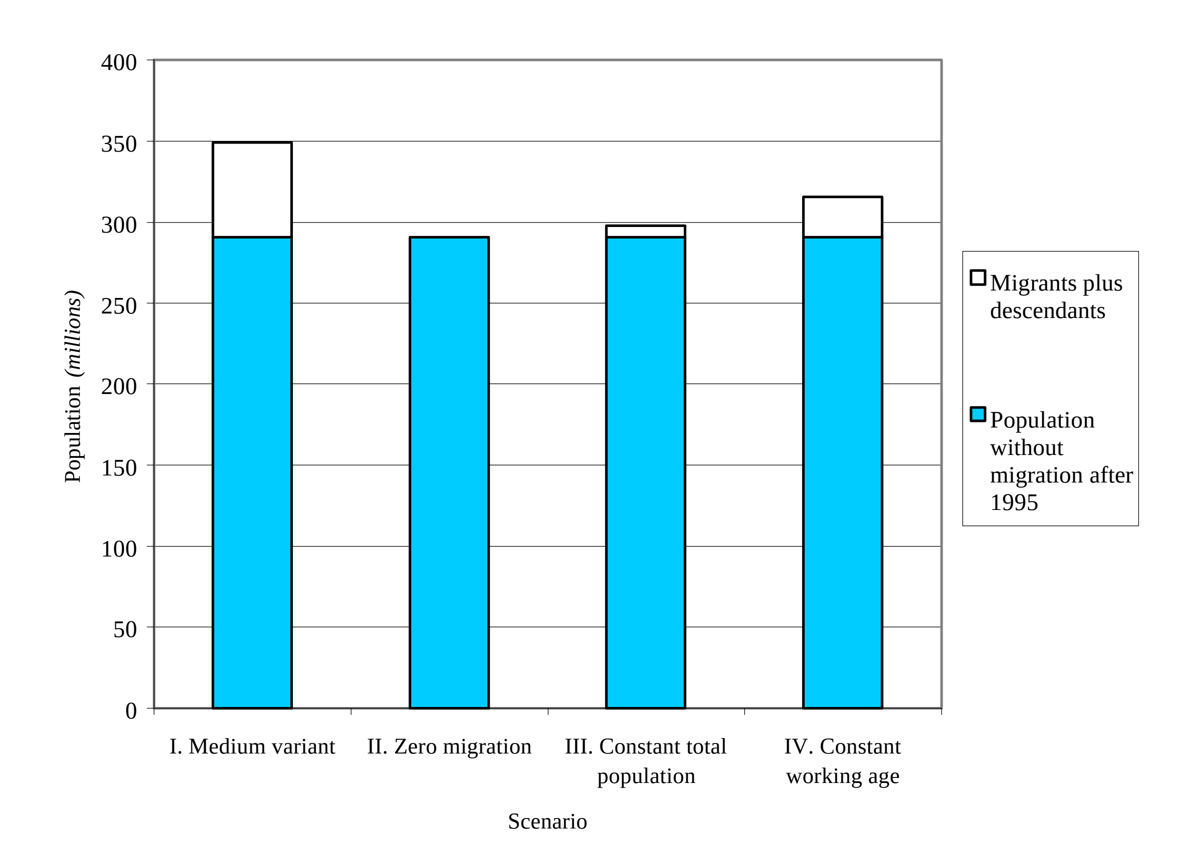



Figure IV.18. Population of the United States in 2050, indicating those who are post-1995 migrants and their descendants, by scenario



EUROPE

Past trends

Europe today consists of 47 countries and areas, a list of which is shown on page viii. The combined population of these 47 countries was 728 million in 1995. The total fertility rate in Europe fluctuated at levels slightly below 2.6 births per women in the 1950s and early 1960s, but subsequently took a steady downward course that brought it down to 1.57 births per women by 1990-1995. Life expectancy at birth registered an uneven-paced progress until recently, rising from 66.2 years in 1950-1955 to 73.0 years in 1985-1995. Subsequently, the expectation of life declined to 72.6 years in 1990-1995 - a trend reflecting the sharp deterioration of mortality conditions observed in Eastern Europe, particularly in Russia and Ukraine. The proportion of the population aged 65 or older has risen from 8.2 per cent in 1950 to 13.9 per cent in 1995. The potential support ratio declined from 8.0 in 1950 to 4.8 in 1995.

Scenario I

Scenario I, the medium variant of the United Nations *1998 Revision*, assumes an average net intake of 428,000 migrants per year between 1995-2050, for a net total of 23,530,000 migrants during the period. After a slight increase between 1995 and 2000, when the total population of Europe would reach its top level at 729 million, continuous decline is projected to set in immediately after 2000. By 2050, Europe would have lost some 100 million inhabitants and would therefore have a population of only about 628 million or 14 per cent less than in 1995. (The results of the *1998 Revision* are shown in the annex tables.) By 2050, out of this total population of 628 million, 27 million, or 4.3 per cent would be post-1995 immigrants or their descendants. Up to 2010, the population aged 15-64 would register diminishing increases; having topped at some 497 million in 2010, it will thereafter decline rapidly. By 2050, the working age population of Europe would be down to 364 million, a 25 per cent reduction in relation to the 1995 level. On the other hand, the population aged 65 or older would steadily rise from 101 million in 1995 to nearly 173 million in 2050. As a result, the potential support ratio would be severely reduced from 4.8 in 1995 to 2.1 in 2050.

Scenario II

Scenario II, which is the medium variant with zero migration, uses the fertility and mortality assumptions of the medium variant of the *1998 Revision*, but without any migration to Europe after 1995. The results in this scenario show that in absence of migration, the total population would start decreasing immediately after 1995, and by 2050 it would be down to 600 million - approximately 27 million less than in scenario I, and some 127 million (or 18 per cent) down from the 1995 level. The population aged 15-64 would initially continue to rise, going from 487 million in 1995 to 493 million in 2005; thereafter it would drop steadily to reach 345 million in 2050 - a decline of almost 30 per cent in relation to 1995. The population aged 65 or older would increase from 101 million in 1995 to 169 million in 2050. While the absence of migration means considerably smaller population numbers, it would impact less on the population aging process: the potential support ratio would decline to 2.0 in 2050, which is only marginally lower than the figure (2.1) in scenario I.

Scenario III

Scenario III keeps the size of the total population of Europe constant at its maximum of 728 million, and calculates the number of migrants that would be required in order to prevent the decline of the population in the face of an increasing excess of deaths over births. The calculations show that a net total of 100 million migrants would be required during the period 1995-2050 just to maintain the total population of Europe at its 1995 level. This corresponds to an average of approximately 1.8 million net migrants per year. By 2050, out of a total population of 728 million, 127 million, or close to 18 per cent, would be post-1995 immigrants or their descendants.

Scenario IV

Scenario IV the keeps the size of the population aged 15 to 64 constant at 492.6 million, which is the maximum level that it would reach (in 2005) in absence of migration after 1995. The calculations show that the number of migrants that would be required to prevent the decline of the working age population after that point would total 161 million over the period 2005-2050, or a net average of approximately 3.6 million migrants per year during those 45 years. This would cause the total population to grow from 728 million in 1995 to 809 million in 2050; out of these 809 million people, some 209 million or 26 per cent would be post-2005 immigrants or their descendants.

Scenario V

Scenario V keeps the potential support ratio at its 1995 value of 4.8 persons aged 15-64 years for each person aged 65 years or older. In order to keep the potential support ratio constant at that level, it would be necessary to have almost 1.4 billion immigrants from 1995 to 2050, an average of 25.2 million a year. By 2050, the population of Europe would have grown to 2.3 billion out of which 1.7 billion or almost three quarters would be post-1995 immigrants or their descendants.

Discussion

United Nations estimates of the average net total number of migrants in Europe around 1997 are in the region of 950 thousand per year. This level would be about half the long-term average net number of migrants required to prevent the total population from declining; one third of the number required to prevent the working-age population from declining; and about 4 per cent of the number required to keep up the potential support ratio at its 1995 level. Figure IV.20 shows, for scenarios I, II, III and IV, the population of Europe in 2050, indicating the share that are post-1995 migrants and their descendants.

In absence of migration, the calculations in this report indicate that the upper limit of the working age would need to be raised to about 75 years in Europe in order to obtain in 2050 the same potential support ratio observed in 1995, i.e. 4.8 persons of working age per older person.

TABLE IV.20. POPULATION INDICATORS FOR EUROPE BY PERIOD FOR EACH SCENARIO

Scenario	I	II	III	IV	V
Period	*Medium variant*	*Medium variant with zero migration*	*Constant total population*	*Constant age group 15-64*	*Constant ratio 15-64/65 years or older*
			A. Average annual number of migrants (thousands)		
1995-2000	950	0	854	0	5 844
2000-2025	486	0	1 323	2 696	17 246
2025-2050	265	0	2 511	3 758	37 031
2000-2050	376	0	1 917	3 227	27 139
1995-2050	428	0	1 821	2 934	25 203
			B. Total number of migrants (thousands)		
1995-2000	4 750	0	4 270	0	29 220
2000-2025	12 162	0	33 081	67 393	431 153
2025-2050	6 617	0	62 787	93 953	925 779
2000-2050	18 779	0	95 869	161 346	1 356 932
1995-2050	23 530	0	100 137	161 346	1 386 151
			C. Total population (thousands)		
1950	547 318	-	-	-	-
1975	676 390	-	-	-	-
1995	727 912	-	-	-	-
2000	728 887	723 482	727 912	723 482	753 810
2025	702 335	684 055	727 912	759 766	1 212 912
2050	627 691	600 464	727 912	809 399	2 346 459
			D. Age group 0-14 (thousands)		
1950	143 174	-	-	-	-
1975	160 557	-	-	-	-
1995	139 464	-	-	-	-
2000	127 346	125 509	126 643	125 509	133 272
2025	103 212	100 408	110 158	119 218	223 700
2050	90 430	86 378	112 731	129 140	456 670
			E. Age group 15-64 (thousands)		
1950	359 162	-	-	-	-
1975	438 455	-	-	-	-
1995	487 110	-	-	-	-
2000	494 102	492 142	495 287	492 142	513 673
2025	451 599	438 874	470 673	492 555	818 857
2050	364 277	345 100	432 959	492 555	1 564 343
			F. Age group 65+ (thousands)		
1950	44 981	-	-	-	-
1975	77 377	-	-	-	-
1995	101 338	-	-	-	-
2000	107 439	105 831	105 982	105 831	106 865
2025	147 524	144 774	147 081	147 993	170 355
2050	172 985	168 986	182 222	187 704	325 446
			G. Potential support ratio 15-64/65+		
1950	7.98	-	-	-	-
1975	5.67	-	-	-	-
1995	4.80	-	-	-	-
2000	4.60	4.65	4.67	4.65	4.81
2025	3.06	3.03	3.20	3.33	4.81
2050	2.11	2.04	2.38	2.62	4.81

EUROPE

Figure IV.19. Age-sex structures by scenario for 2000, 2025 and 2050
(*Population in millions*)

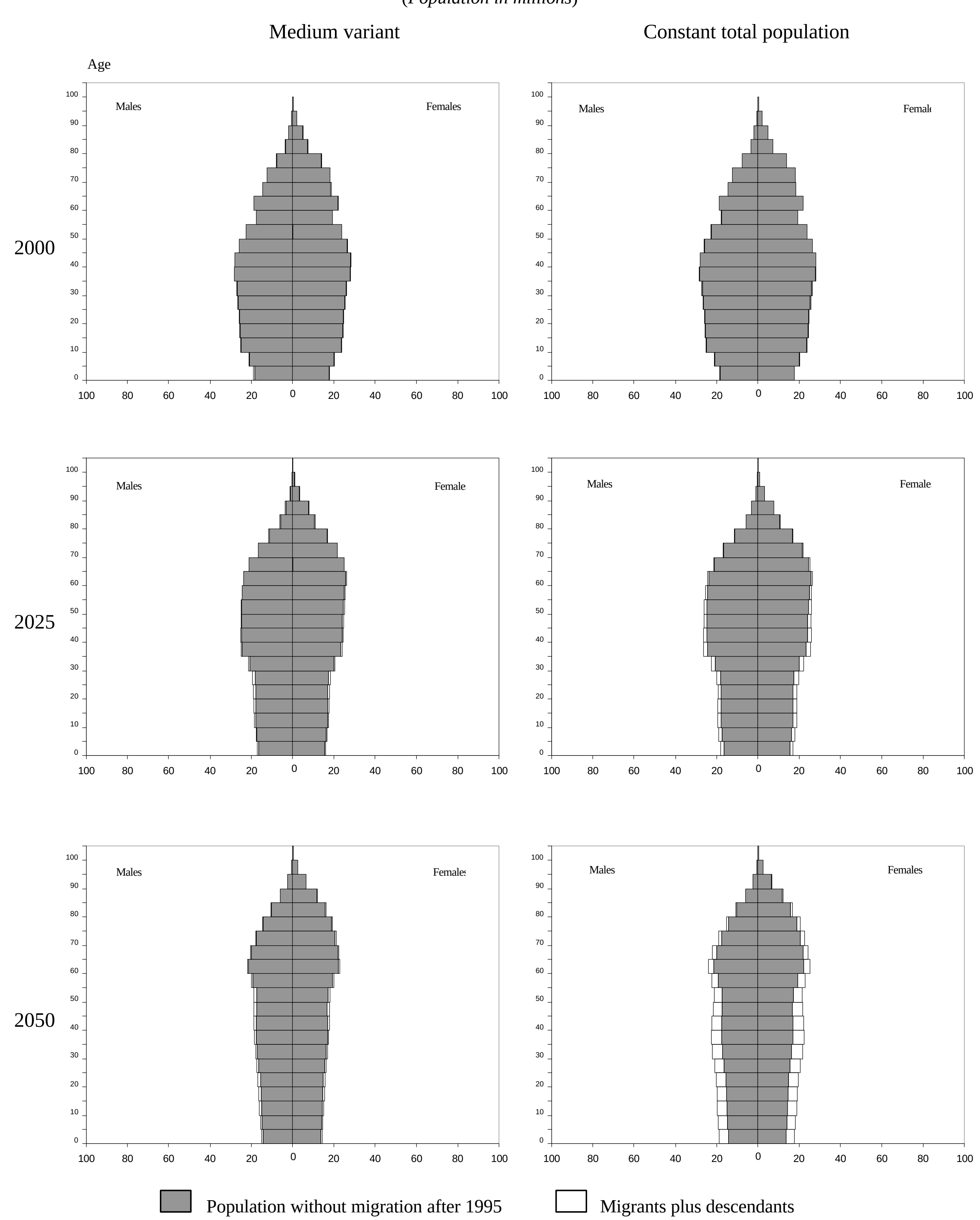


Figure IV.19 (continued)

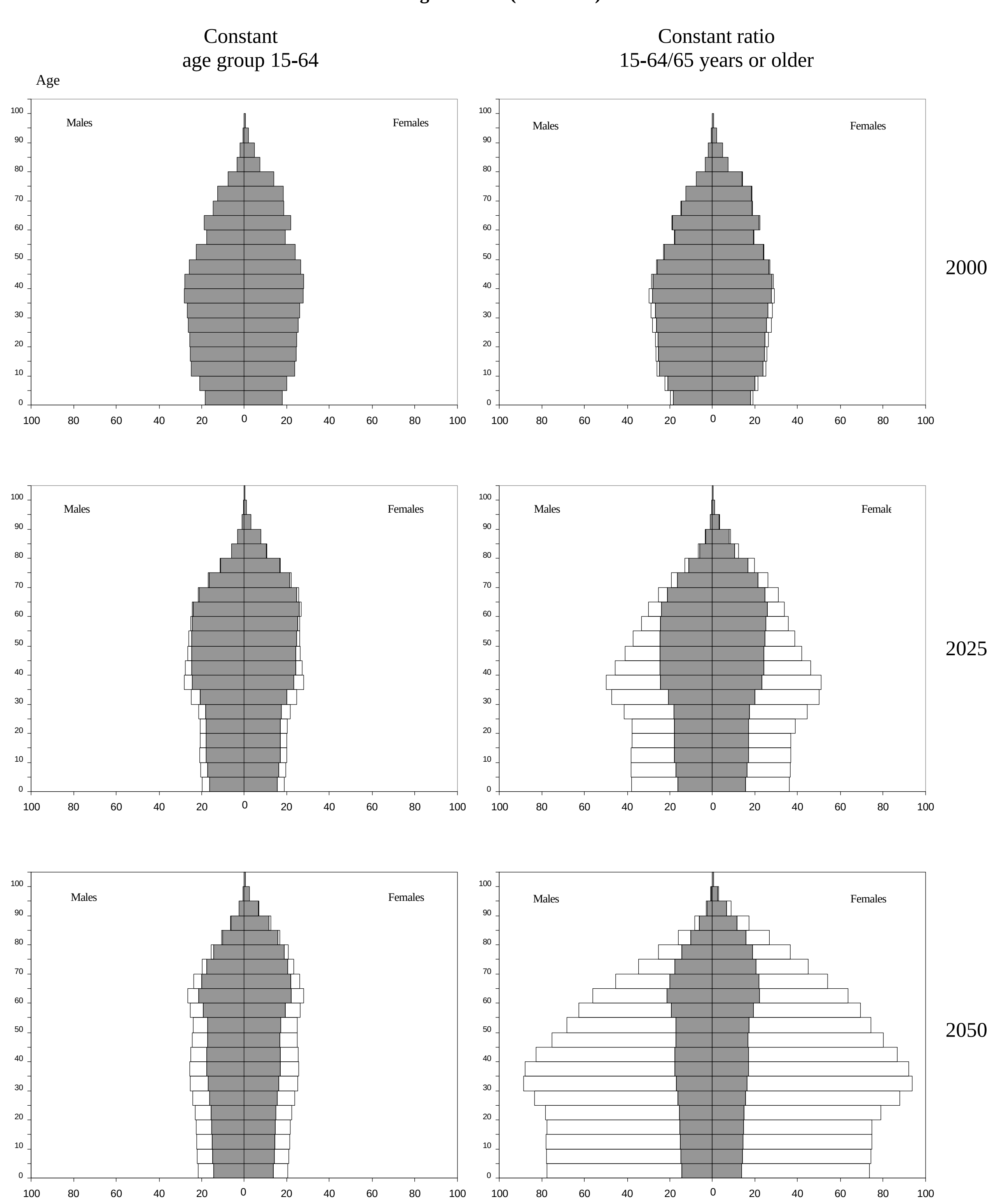
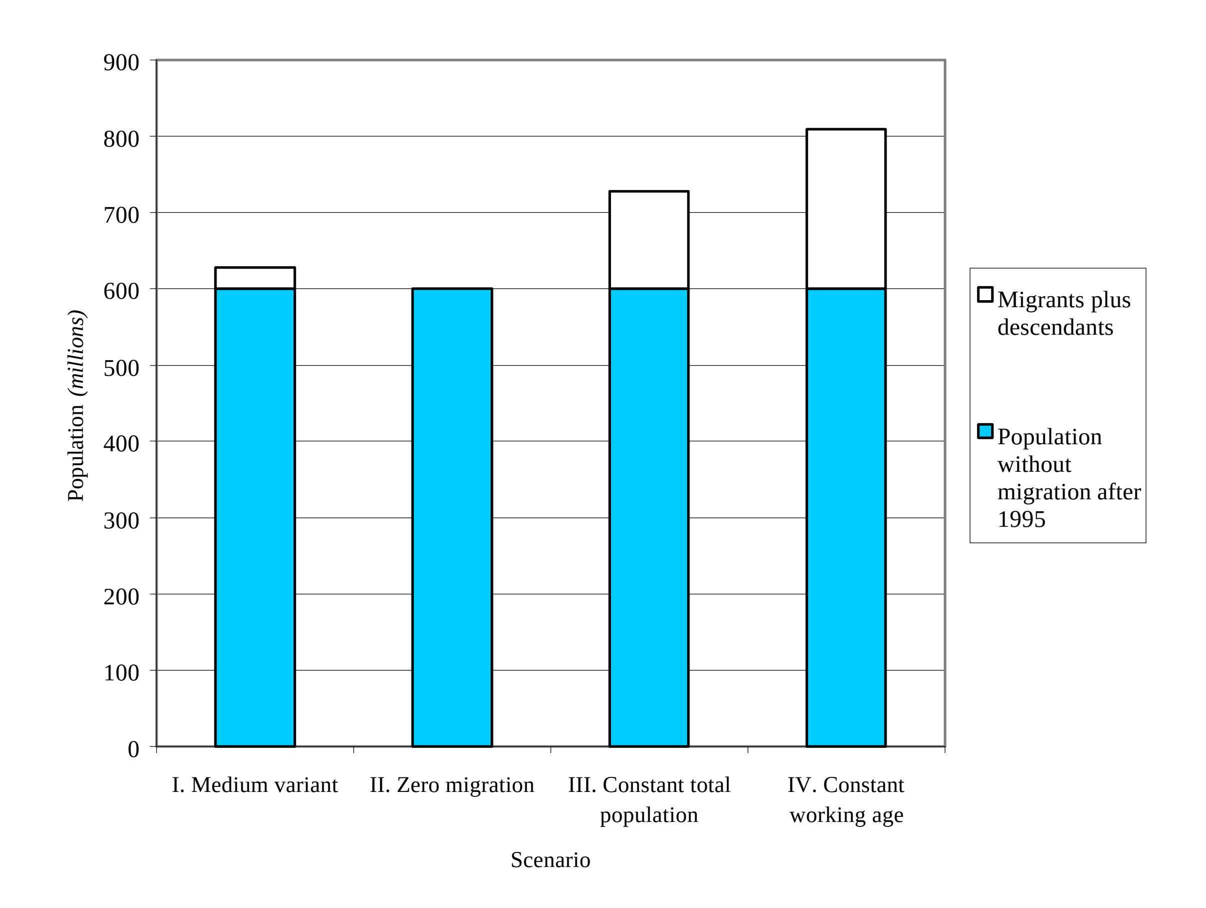


Figure IV.20. Population of Europe in 2050, indicating those who are post-1995 migrants and their descendants, by scenario



EUROPEAN UNION

Past trends

The total fertility rate in the 15 countries that presently constitute the European Union was on a rising curve until 1960-65, when it attained 2.69 births per woman. Since 1995, fertility has constantly decreased, coming under the replacement level of two children per woman around 1975. By 1990-95, it stood at 1.5 births per woman. Life expectancy at birth, meanwhile, has risen from 67.0 years in 1950-1955 to 76.5 years in 1990-1995. As a consequence of these trends, the proportion of the population aged 65 or older rose from 9.5 per cent in 1950 to 15.5 per cent in 1995, and the potential support ratio (the number of persons aged 15-64 for each person aged 65 or older) fell in the same period from 7.0 to 4.3.

Scenario I

Scenario I, the medium variant of the United Nations *1998 Revision*, assumes an average net intake very close to 300 thousand migrants per year between 1995-2050, for a total of almost 16.4 migrants during the period. The medium variant projects that the total population of the 15 countries would briefly continue to grow until around 2005, by which time it would attain 376.5 million; from that point, it would start to decline at increasing speed, so that by 2050 some 331.3 million people would remain - a loss of 40.6 million persons in relation to 1995 and 45.2 million persons in relation to the projected peak level in 2005 (The results of the 1998 United Nations projections are shown in the annex tables). This loss would be equivalent to the combined present population of the seven smallest members of the European Union, namely Austria, Finland, Denmark, Ireland, Luxembourg, Sweden and Portugal (see table IV.21). The European Union population, which in 1995 was some 100 million larger than that of the United States, in 2050 would have become smaller than the United States by about 20 million.

TABLE IV.21. POPULATION OF THE MEMBER COUNTRIES OF THE EUROPEAN UNION, 1995 AND 2050, SCENARIO I

Member countries as of 2000	*Population (thousands)*		*Projected change 1995-2050*	
	1995	*2050 (Scenario I)*	*(thousands)*	*(per cent)*
Austria	8 001	7 094	- 907	- 11.3
Belgium	10 088	8 918	- 1 170	- 11.6
Denmark	5 225	4 793	- 567	- 10.9
Finland	5 108	4 898	- 210	- 4.1
France	58 020	59 883	1 863	+ 3.2
Germany	81 661	73 303	- 8 358	- 10.2
Greece	10 489	8 233	- 2 256	- 21.5
Ireland	3 609	4 710	1 101	+ 30.5
Italy	57 338	41 197	- 16 141	- 28.2
Luxembourg	407	430	23	+ 5.7
Netherlands	15 459	14 156	- 1 303	- 8.4
Portugal	9 856	8 137	- 1 719	- 17.4
Spain	39 568	30 226	9 342	- 23.6
Sweden	8 800	8 661	- 139	- 1.6
United Kingdom	58 308	56 667	- 1 641	- 2.8
European Union	371 937	331 307	- 40 630	- 10.9

The population aged 15-64 would register first a slight increase from 249 million in 1995 to less than 252 in 2005, but it would be followed by an accelerating decline that would bring it down to slightly under 188 million by 2050. The projected decline (61.5 million between 1995 and 2050) would thus reduce the working-age population by one quarter in relation to 1995 levels. On the other hand, the population aged 65 or older would register steady growth, rising from 58 million in 1995 to 96 million in 2050, an increase of approximately 65 per cent. As a result, the potential support ratio would decrease from 4.3 in 1995 to slightly less than 2.0 in 2050.

Scenario II

Scenario II, which is the medium variant with zero migration, uses the fertility and mortality assumptions of the medium variant of the *1998 Revision*, but without any migration to the 15 countries of the European Union after 1995. In this scenario, the total population would start declining already after 2000 rather than five years later, and by 2050 it would be down to approximately 311 million, which is 20 million less than in scenario I. The population aged 15-64 would immediately start declining, dropping from 249 million in 1995 to 174 million in 2050. Thus, without migration, the working age population would be cut by 30 per cent rather then by 25 per cent as in scenario I. The population aged 65 or older would increase from 58 million in 1995 to 92 million in 2050, entailing a decline of the potential support ratio to 1.9 in 2050, 0.1 less than projected in scenario I.

Scenario III

Scenario III keeps the size of the total population constant at its projected peak level of 372 million in 2000 (assuming no in-migration in the period 1995-2000). In order to keep the total population constant at that level, it would be necessary to have 47.4 million migrants between 2000 and 2050, an average of 949,000 migrants per year. By 2050, out of a total population of 372 million, 61.6 million, or 16.5 per cent, would be post-2000 immigrants or their descendants**.** The potential support ratio in 2050 would be 2.2, which is only 0.2 point higher than in scenario I.

Scenario IV

Scenario IV keeps the size of the population aged 15-64 constant at its 1995 level of 249 million (which would be the maximum level that it would have ever reached in absence of post-1995 migration). In order to keep the working age population constant at that level, it would be necessary in fact to have 79.6 million migrants between 1995 and 2050, an average of 1.4 million migrants per year. Due to irregularities in the age structure of the population, the annual number of migrants required to keep the working-age population constant would first grow rapidly and then decline. It would peak in 2025-2030, with an annual number of net migrants in excess of 2.8 million. By 2050, out of a total population of 418.5 million, post-1995 immigrants and their descendents would be 107.7 million, or 25.7 per cent. The potential support ratio in 2050 according to this scenario would be significantly higher than in scenario I, (2.4 against 2.0) but the difference is modest compared to magnitude of the drop from the level of 4.3 in 1995.

Scenario V

Scenario V keeps the potential support ratio at its 1995 value of 4.3 persons aged 15-64 for each person aged 65 or older. In order to keep the potential support ratio constant at that level, it would be necessary for the European Union to have 701 million immigrants from 1995 to 2050, an average of 12.7 million per year. Also, as under scenario IV, the irregularities in the age structure of the population would cause fluctuations in the annual number of migrants required to keep the potential support ratio constant. The peak levels would be attained in 2030-2035, with 20.3 million net immigrants per year. By 2050, out

of a total population of 1.2 billion, 918 million, or about 75 per cent, would be post-1995 immigrants or their descendants.

Discussion

According to recent national estimates, the European Union had an average annual net migration of 857,000 persons from 1990 to 1998. Thus, the number of migrants needed to prevent a decline in the total population is roughly comparable to the level of migration in the 1990s. However, in order to prevent a decline of the working-age population, the annual number of migrants would need to nearly double in relation to recent experience. Figure IV.21 shows, for scenarios I, II, III and IV, the population of the European Union in 2050, indicating the share that are post-1995 migrants and their descendants.

The number of migrants necessary annually to keep the potential support ratio constant at its 1995 level would be 15 times greater than the net migration level in the 1990s. Towards the end of the period, i.e. by 2040-2050, the net annual number of migrants required by the European Union would be equivalent to half the world's annual population growth.

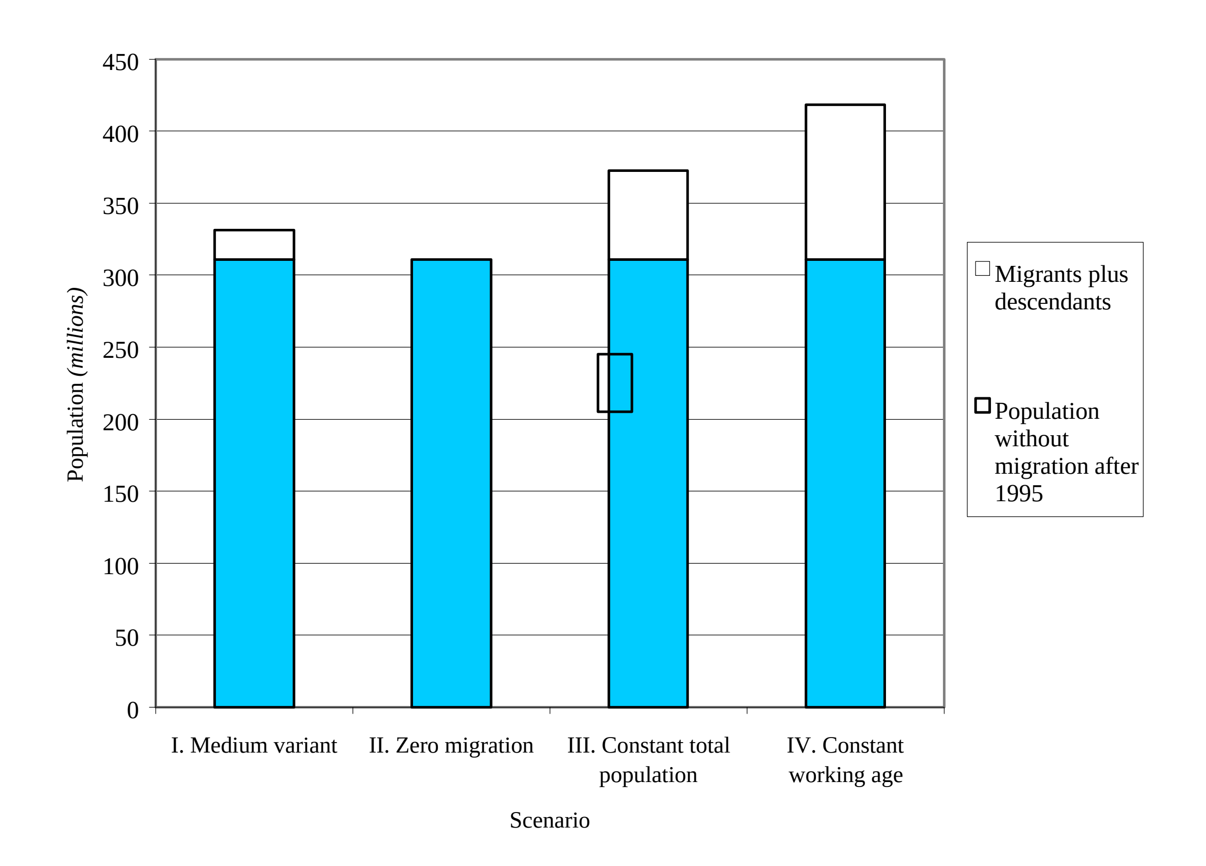
Thus, if replacement migration were to be used as the mechanism for shoring up the potential support ratio in the European Union at its present level, by 2050 the total population of the European Union would have grown to more than three times its present level. In this process, the European Union's share of world population would have more than doubled, from 6.6 per cent in 1995 to 13.8 percent 2050. In addition, three-quarters of the total population in 2050 would consist of post-1995 migrants from outside the present boundaries of the Union and their descendants.

In absence of migration, the calculations in this report indicate that the upper limit of the working age would need to be raised to about 76 years in the European Union in order to obtain in 2050 the same potential support ratio observed in 1995, i.e. 4.3 persons of working age per older person.

TABLE IV.22. POPULATION INDICATORS FOR EUROPEAN UNION BY PERIOD FOR EACH SCENARIO

Scenario / *Period*	*I* Medium variant	*II* Medium variant with zero migration	*III* Constant total population	*IV* Constant age group 15-64	*V* Constant ratio 15-64/65 years or older
			A. Average annual number of migrants (thousands)		
1995-2000	574	0	0	46	5 302
2000-2025	330	0	612	1 380	8 556
2025-2050	210	0	1 287	1 795	18 404
2000-2050	270	0	949	1 588	13 480
1995-2050	297	0	863	1 447	12 736
			B. Total number of migrants (thousands)		
1995-2000	2 870	0	0	230	26 510
2000-2025	8 239	0	15 290	34 502	213 911
2025-2050	5 250	0	32 166	44 874	460 088
2000-2050	13 489	0	47 456	79 375	673 999
1995-2050	16 361	0	47 456	79 605	700 506
			C. Total population (thousands)		
1950	296 151	-	-	-	-
1975	349 313	-	-	-	-
1995	371 937	-	-	-	-
2000	375 276	372 440	372 440	372 680	400 089
2025	367 342	354 500	372 440	394 551	641 056
2050	331 307	310 839	372 440	418 509	1 228 341
			D. Age group 0-14 (thousands)		
1950	72 524	-	-	-	-
1975	82 958	-	-	-	-
1995	64 740	-	-	-	-
2000	62 380	61 879	61 879	61 941	69 006
2025	52 926	50 320	54 641	60 204	116 157
2050	47 856	44 130	57 445	65 846	237 981
			E. Age group 15-64 (thousands)		
1950	195 578	-	-	-	-
1975	220 708	-	-	-	-
1995	249 382	-	-	-	-
2000	251 299	249 213	249 213	249 382	268 773
2025	230 090	221 083	233 826	249 382	426 112
2050	187 851	174 470	216 929	249 382	803 974
			F. Age group 65+ (thousands)		
1950	28 049	-	-	-	-
1975	45 647	-	-	-	-
1995	57 815	-	-	-	-
2000	61 596	61 349	61 349	61 357	62 310
2025	84 326	83 096	83 973	84 964	98 786
2050	95 600	92 240	98 067	103 280	186 386
			G. Potential support ratio 15-64/65+		
1950	6.97	-	-	-	-
1975	4.84	-	-	-	-
1995	4.31	-	-	-	-
2000	4.08	4.06	4.06	4.06	4.31
2025	2.73	2.66	2.78	2.94	4.31
2050	1.96	1.89	2.21	2.41	4.31

Figure IV.21. Population of the European Union in 2050, indicating those who are post-1995 migrants and their descendants, by scenario



EUROPEAN UNION

Figure IV.22. Age-sex structures by scenario for 2000, 2025 and 2050
(*Population in millions*)

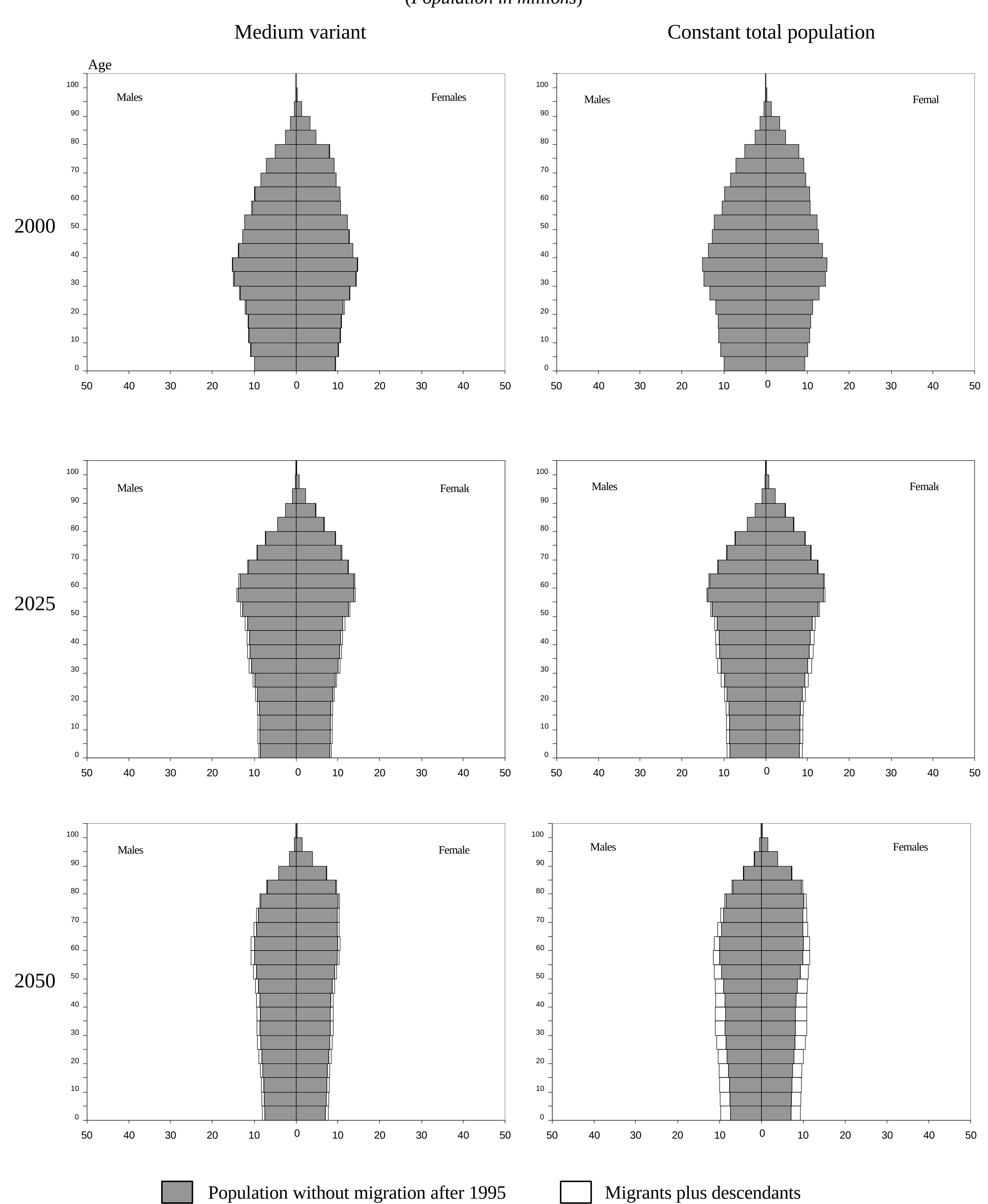
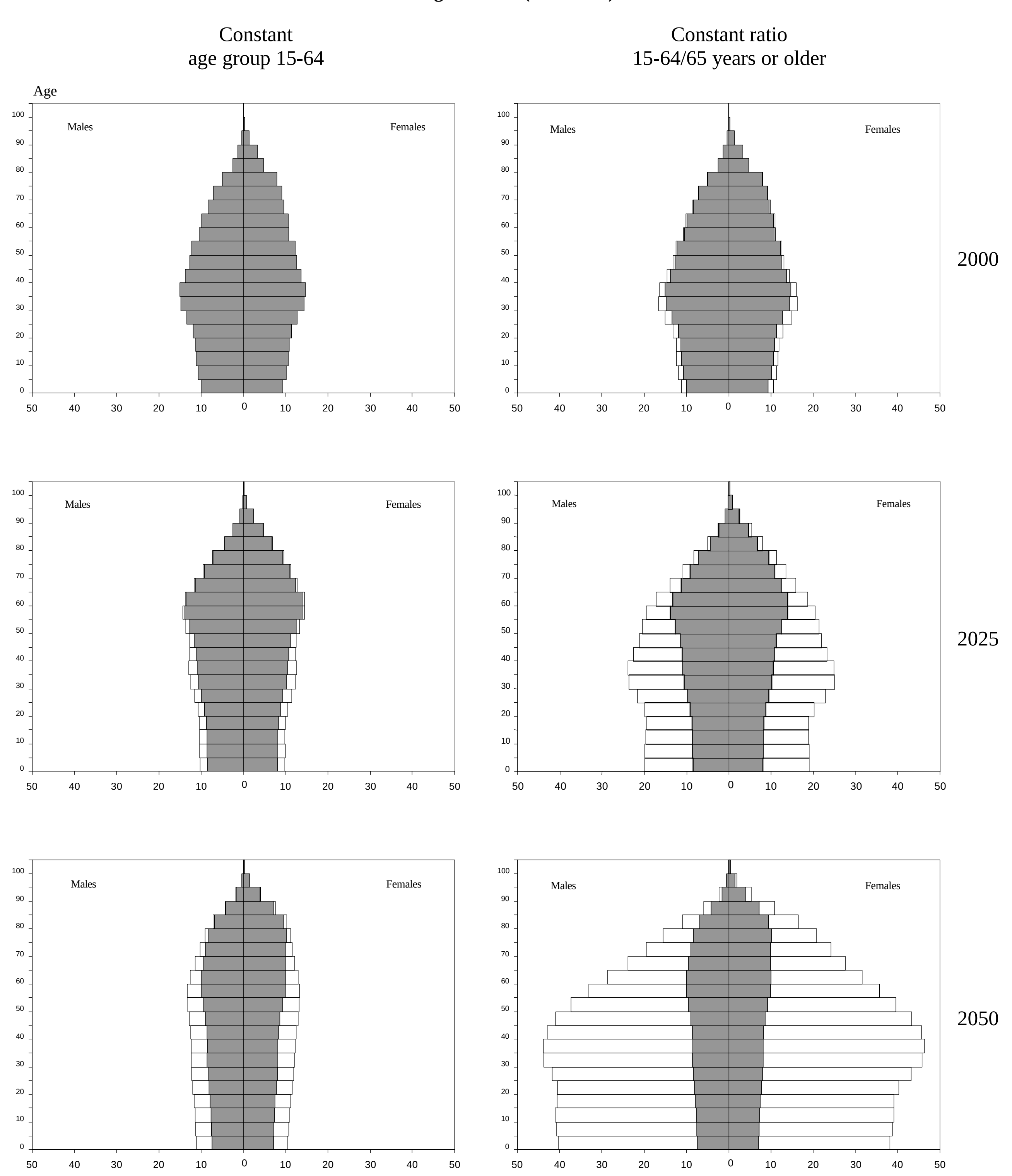


Figure IV.22 (continued)



B. COUNTRY RESULTS

V. CONCLUSIONS AND IMPLICATIONS

The present study focuses on the question of whether replacement migration is a solution to population decline and population ageing. Replacement migration refers to the international migration that would be needed to offset declines in the size of a population, declines in the population of working age as well as to offset the overall ageing of a population.

This replacement migration study focuses its investigation on the possible effects of international migration on the population size and age structure of a range of countries that have in common a fertility pattern below the replacement level. In the absence of migration, all countries with fertility below replacement level will see their population size start declining at some point of time in the near future, if it is not already the case today. In some countries, the projected declines in population size during the first half of the 21st century are as high as a quarter or a third of the entire population of the country.

In addition, the lower the levels of fertility decline, the more pronounced will be the aging of the population of the country. One of the major consequences of population aging is the reduction in the ratio between the population in working-age group 15-64 years and the population 65 years or older, i.e., the potential support ratio (PSR). Everything else being equal, a lower potential support ratio means that it is much more onerous for the working-age population to support the needs of the older retired population.

While to some extent an increase in the proportion of elderly persons aged 65 years or older is accompanied by a decrease in the proportion of children under 15 years of age, the two age groups are not directly comparable. Some studies have estimated that for an industrialized country, on average, the cost to support a person aged 65 years and over is substantially greater than the cost to support a young person less than 20 years old. A number of researchers, for example, Foot (1989), Cutler, Poterba, Sheiner, and Summers (1990), and Ahlburg and Vaupel (1993), report that when considering the public provision of programs or taking into account private non-medical expenses, public education expenses and medical care, the costs are roughly two and a half times greater to support an older person (aged 65 or older) than to support a young person (under 20 years of age).

While below-replacement fertility is the major cause of population decline and population aging, even a sudden sharp increase in fertility in the short to medium term would not substantially alter the situation regarding the potential support ratios. Of course, as was shown earlier in this report, the potential support ratios could be maintained at current levels by increasing the upper limit to the working-age population. In most cases, the upper limit would need to be raised to roughly 75 years. However, if retirement ages remain essentially where they are today, increasing the size of the working-age population through international migration is the only option in the short to medium term to reduce the declines in the potential support ratio.

The present study considers countries where current fertility ranges from 1.2 to 2.0 children per woman. For France, United Kingdom, the United States and the European Union, the number of migrants needed to offset population decline are less than or comparable to recent past experience. While this is also the case for Germany and the Russian Federation, their migration flows in the 1990s were relatively large due to reunification and dissolution, respectively. In contrast, for Italy, Japan, the Republic of Korea and Europe, a level of immigration much higher than experienced in the recent past would be needed to offset population decline. This higher level of immigration for Italy, Japan and Europe would result in 18 to 29 per cent of the 2050 population being post-1995 immigrants and their descendants; for the Republic of Korea the comparable figure is 3 per cent.

In the absence of migration, the size of the working-age population declines faster than the overall population. As a result of this faster rate of decline, the amount of migration needed to prevent a decline in the working-age population is larger than that for the overall population. In the four countries where fertility levels are close to the replacement level, the resultant population in 2050 would have 8 to 14 per cent being post-1995 migrants and their descendants. In the other six countries and regions, the post-1995 migrants and their descendants would be between 26 and 39 per cent of the 2050 population. While some of these numbers may appear to be high, they remain within the range of migration experienced in the recent past in some industrialized countries. For example, in 1990, 16 per cent of the population of Canada and Switzerland, and 23 per cent of the population of Australia, were foreign-born.

In contrast to the migration streams needed to offset total or working-age population decline, the levels of migration that would be needed to prevent the countries from ageing are of substantially larger magnitudes. By 2050, these larger migration flows would result in populations where the proportion of post-1995 migrants and their descendants would range between 59 per cent and 99 per cent. Such high levels of migration have not been observed in the past for any of these countries or regions. Moreover, it seems extremely unlikely that such flows could happen in these countries in the foreseeable future. Therefore, it appears inevitable that the populations of the low-fertility countries will age rapidly in the 21st century.

The consequences of a much older population age-structure than in the past are numerous and far-reaching. One important consideration that has been examined in this study is the potential support ratio (PSR). The current system of providing income and health services for older no-longer-working persons has been based, by and large, on an age structure with a potential support ratio of 4 to 5 persons in working-age for each older person aged 65 years or older. If the current age at retirement does not change, the PSR is projected to decline to about 2.

A decline of the PSR from 4 or 5 to 2 would certainly create the need to reconsider seriously the modalities of the present system of pensions and health care for the elderly. Theoretically, as noted above, a possible option would be to increase the upper limit of the working age sufficiently to attain a sustainable PSR. Such an option would simultaneously increase the numbers of working-age people and reduce the number of non-working older persons. Other possible options that may need to be examined thoroughly include adjusting economic measures, such as increased labour-force participation, higher contributions from workers and employers and lower benefits provided to retirees. Certainly, increased productivity in the future may increase the available resources from the working-age population. However, it is also possible that increased productivity may lead to increased aspirations and demands from both the working-age and the retired populations.

During the second half of the 20th century, the industrialized countries have benefited from population sizes and population age-structures that were the result of a history of moderate levels of fertility and low mortality. These favourable demographic circumstances made possible, to a large extent, the provision of relatively generous benefits to retirees at comparatively low costs to workers and employers. However, these age-structures were not permanent, but merely transitional.

During the first half of the 21st century, the populations of most industrialized countries are projected to become smaller and older in response to below-replacement fertility as well as increased longevity. The consequences of significant population decline and population ageing are not well understood as they are new demographic experiences for countries. Keeping retirement and health-care systems for older persons solvent in the face of declining and ageing populations, for example, constitutes a new situation that poses serious challenges for Governments and civil society.

The new challenges being brought about by declining and ageing populations will require objective, thorough and comprehensive reassessments of many established economic, social and political policies and programmes. Such reassessments will need to incorporate a long-term perspective. Critical issues to be addressed in those reassessments would include: (a) the appropriate ages for retirement; (b) the levels, types and nature of retirement and health-care benefits for the elderly; (c) the labour-force participation; (d) the assessed amounts of contributions from workers and employers to support retirement and health-care benefits for the increasing elderly population; and (e) policies and programmes relating to international migration, in particular replacement migration, and the integration of large numbers of recent migrants and their descendants.

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ANNEX TABLES

TABLE A.1. FRANCE, *1998 REVISION*

FRANCE

A. ESTIMATES

Indicator	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995
Population (thousands)										
Total	41 829	43 428	45 684	48 758	50 772	52 699	53 880	55 170	56 718	58 020
Males	20 105	20 971	22 162	23 737	24 792	25 807	26 312	26 900	27 613	28 279
Females	21 723	22 457	23 522	25 021	25 980	26 892	27 568	28 270	29 104	29 741
Sex ratio (per 100 females)	92.6	93.4	94.2	94.9	95.4	96.0	95.4	95.2	94.9	95.1
Age distribution:										
Percentage aged 0-4	9.5	9.0	8.8	8.7	8.3	7.8	6.9	6.9	6.7	6.3
Percentage aged 5-14	13.2	15.4	17.6	16.9	16.5	16.1	15.4	14.3	13.6	13.2
Percentage aged 15-24	15.2	13.7	12.4	14.5	16.4	16.1	15.8	15.5	15.0	14.0
Percentage aged 60 or over	16.2	16.3	16.8	17.5	18.1	18.3	17.2	18.2	19.1	20.0
Percentage aged 65 or over	11.4	11.6	11.6	12.1	12.9	13.5	14.0	13.0	14.0	15.0
Percentage of women aged 15-49	47.3	44.9	42.6	43.4	46.1	46.2	46.9	47.6	48.6	49.1
Median age (years)	34.5	32.9	33.0	32.7	32.3	31.6	32.5	33.7	34.7	36.1
Population density (per sq km)	76	79	83	88	92	96	98	100	103	105

Indicator	1950-1955	1955-1960	1960-1965	1965-1970	1970-1975	1975-1980	1980-1985	1985-1990	1990-1995
Population change per year (thousands)	320	451	615	403	385	236	258	309	260
Births per year (thousands)	830	818	852	853	841	746	792	772	734
Deaths per year (thousands)	544	525	531	551	551	547	555	531	546
Population growth rate (percentage)	0.75	1.01	1.30	0.81	0.75	0.44	0.47	0.55	0.45
Crude birth rate (per 1,000 population)	19.5	18.4	18.0	17.2	16.3	14.0	14.5	13.8	12.8
Crude death rate (per 1,000 population)	12.8	11.8	11.2	11.1	10.7	10.3	10.2	9.5	9.5
Total fertility rate (per woman)	2.73	2.71	2.85	2.61	2.31	1.86	1.87	1.81	1.72
Gross reproduction rate (per woman)	1.33	1.32	1.39	1.27	1.13	0.91	0.91	0.88	0.84
Net reproduction rate (per woman)	1.26	1.27	1.34	1.23	1.10	0.89	0.90	0.87	0.83
Infant mortality rate (per 1,000 births)	45	33	25	21	16	11	9	8	7
Life expectancy at birth (years)									
Males	63.7	66.5	67.6	67.9	68.6	69.7	70.8	72.0	73.4
Females	69.5	72.9	74.5	75.4	76.3	77.8	78.9	80.3	81.5
Both sexes combined	66.5	69.6	71.0	71.5	72.4	73.7	74.7	76.0	77.1

B. MEDIUM-VARIANT PROJECTIONS

Indicator	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	58 020	59 080	59 925	60 597	61 108	61 500	61 662	61 632	60 998	59 883
Males	28 279	28 798	29 208	29 519	29 759	29 948	30 019	29 984	29 623	29 117
Females	29 741	30 281	30 718	31 078	31 349	31 553	31 643	31 648	31 375	30 766
Sex ratio (per 100 females)	95.1	95.1	95.1	95.0	94.9	94.9	94.9	94.7	94.4	94.6
Age distribution:										
Percentage aged 0-4	6.3	6.0	5.9	5.8	5.8	5.8	5.6	5.5	5.5	5.6
Percentage aged 5-14	13.2	12.7	12.1	11.7	11.5	11.5	11.5	11.4	11.0	11.2
Percentage aged 15-24	14.0	13.1	12.8	12.4	11.8	11.5	11.4	11.4	11.5	11.2
Percentage aged 60 or over	20.0	20.5	20.9	22.9	24.8	26.5	28.1	29.5	31.1	31.4
Percentage aged 65 or over	15.0	15.9	16.4	16.6	18.4	20.1	21.7	23.2	25.3	25.5
Percentage in school ages 6-11	7.9	7.6	7.2	7.0	6.9	6.9	6.9	6.8	6.6	6.7
Percentage in school ages 12-14	4.0	3.9	3.7	3.5	3.5	3.4	3.4	3.5	3.3	3.3
Percentage in school ages 15-17	4.0	3.9	3.8	3.6	3.5	3.4	3.4	3.5	3.4	3.3
Percentage in school ages 18-23	8.6	7.8	7.7	7.5	7.1	6.9	6.8	6.8	7.0	6.8
Percentage of women aged 15-49	49.1	47.7	46.1	44.4	42.6	41.0	39.7	39.1	38.4	38.4
Median age (years)	36.1	37.6	39.0	40.3	41.5	42.3	43.0	43.6	44.1	43.9
Population density (per sq km)	105	107	109	110	111	112	112	112	111	109

Indicator	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population change per year (thousands)	212	169	134	102	78	32	-6	-63	-112
Births per year (thousands)	715	705	706	712	719	699	682	673	670
Deaths per year (thousands)	543	566	591	620	646	667	688	737	782
Net migration per year (thousands)	40	30	20	10	5	0	0	0	0
Population growth rate (percentage)	0.36	0.28	0.22	0.17	0.13	0.05	- 0.01	- 0.10	- 0.18
Crude birth rate (per 1,000 population)	12.2	11.8	11.7	11.7	11.7	11.3	11.1	11.0	11.1
Crude death rate (per 1,000 population)	9.3	9.5	9.8	10.2	10.5	10.8	11.2	12.0	12.9
Net migration rate (per 1,000 population)	0.7	0.5	0.3	0.2	0.1	0.0	0.0	0.0	0.0
Total fertility rate (per woman)	1.71	1.75	1.82	1.89	1.96	1.96	1.96	1.96	1.96
Gross reproduction rate (per woman)	0.83	0.85	0.89	0.92	0.96	0.96	0.96	0.96	0.96
Net reproduction rate (per woman)	0.82	0.84	0.88	0.91	0.95	0.95	0.95	0.95	0.95
Infant mortality rate (per 1,000 births)	6	6	6	6	5	5	5	5	5
Mortality under age 5 (per 1,000 births)	8	7	7	6	6	6	6	6	5
Life expectancy at birth (years)									
Males	74.2	75.0	75.5	76.0	76.5	77.0	77.5	78.1	78.9
Females	82.0	82.5	83.0	83.4	83.8	84.2	84.6	85.2	86.0
Both sexes combined	78.1	78.8	79.2	79.7	80.1	80.6	81.1	81.6	82.4

Source: United Nations Population Division, *World Population Prospects: The 1998 Revision*.

TABLE A.1 (*continued*)

FRANCE

C. HIGH-VARIANT PROJECTIONS

	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	58 020	59 163	60 308	61 327	62 232	63 075	63 909	64 646	66 072	67 413
Males	28 279	28 841	29 404	29 893	30 335	30 755	31 171	31 528	32 222	32 972
Females	29 741	30 322	30 904	31 433	31 897	32 320	32 739	33 118	33 850	34 441
Age distribution:										
Percentage aged 0-4	6.3	6.2	6.3	6.3	6.3	6.4	6.5	6.4	6.7	6.9
Percentage aged 5-14	13.2	12.7	12.1	12.2	12.3	12.4	12.5	12.6	12.9	13.3
Percentage aged 15-24	14.0	13.1	12.8	12.2	11.8	11.8	12.0	12.0	12.3	12.6
Percentage aged 60 or over	20.0	20.5	20.8	22.6	24.4	25.9	27.1	28.2	28.7	27.9
Percentage aged 65 or over	15.0	15.9	16.3	16.4	18.1	19.6	20.9	22.1	23.3	22.7
Percentage of women aged 15-49	49.1	47.6	45.8	43.9	42.0	40.6	39.4	39.0	38.8	39.8
Median age (years)	36.1	37.6	38.8	39.9	40.8	41.3	41.5	41.6	40.6	39.5

	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population change per year (thousands)	229	229	204	181	169	167	147	143	134
Population growth rate (percentage)	0.39	0.38	0.34	0.29	0.27	0.26	0.23	0.22	0.20
Crude birth rate (per 1,000 population)	12.5	12.8	12.8	12.8	12.9	13.1	13.0	13.5	13.8
Crude death rate (per 1,000 population)	9.3	9.5	9.7	10.0	10.3	10.5	10.7	11.3	11.8
Net migration rate (per 1,000 population)	0.7	0.5	0.3	0.2	0.1	0.0	0.0	0.0	0.0
Total fertility rate (per woman)	1.75	1.90	2.00	2.10	2.20	2.30	2.30	2.36	2.36
Gross reproduction rate (per woman)	0.85	0.93	0.97	1.02	1.07	1.12	1.12	1.15	1.15
Net reproduction rate (per woman)	0.84	0.91	0.96	1.01	1.06	1.11	1.11	1.14	1.14

D. LOW-VARIANT PROJECTIONS

	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	58 020	59 017	59 523	59 694	59 587	59 242	58 647	57 786	55 150	51 680
Males	28 279	28 766	29 001	29 056	28 979	28 790	28 474	28 013	26 628	24 919
Females	29 741	30 251	30 521	30 638	30 608	30 452	30 173	29 773	28 522	26 760
Age distribution:										
Percentage aged 0-4	6.3	5.9	5.3	5.0	4.9	4.8	4.6	4.4	4.1	4.1
Percentage aged 5-14	13.2	12.7	12.0	11.2	10.4	10.0	9.8	9.6	9.0	8.6
Percentage aged 15-24	14.0	13.1	12.9	12.6	12.0	11.3	10.5	10.2	10.0	9.6
Percentage aged 60 or over	20.0	20.5	21.0	23.2	25.5	27.5	29.6	31.5	34.4	36.4
Percentage aged 65 or over	15.0	15.9	16.5	16.9	18.9	20.9	22.8	24.7	27.9	29.6
Percentage of women aged 15-49	49.1	47.7	46.4	45.0	43.5	41.8	40.1	39.1	37.1	35.5
Median age (years)	36.1	37.6	39.3	40.9	42.4	43.8	44.9	46.1	48.2	49.8

	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population change per year (thousands)	199	101	34	-21	-69	-119	-172	-264	-347
Population growth rate (percentage)	0.34	0.17	0.06	- 0.04	- 0.12	- 0.20	- 0.30	- 0.47	- 0.65
Crude birth rate (per 1,000 population)	12.0	10.7	10.1	9.9	9.6	9.3	8.8	8.3	8.1
Crude death rate (per 1,000 population)	9.3	9.5	9.9	10.4	10.9	11.3	11.8	13.0	14.6
Net migration rate (per 1,000 population)	0.7	0.5	0.3	0.2	0.1	0.0	0.0	0.0	0.0
Total fertility rate (per woman)	1.68	1.58	1.56	1.56	1.56	1.56	1.56	1.56	1.56
Gross reproduction rate (per woman)	0.82	0.77	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Net reproduction rate (per woman)	0.81	0.76	0.75	0.75	0.75	0.75	0.75	0.75	0.75

E. CONSTANT-VARIANT PROJECTIONS

	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	58 020	59 107	59 898	60 383	60 582	60 544	60 285	59 819	58 106	55 602

	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population growth rate (percentage)	0.37	0.27	0.16	0.07	- 0.01	- 0.09	- 0.16	- 0.29	- 0.44
Crude birth rate (per 1,000 population)	12.3	11.7	11.1	10.7	10.4	10.2	9.9	9.6	9.3
Crude death rate (per 1,000 population)	9.3	9.5	9.8	10.2	10.7	11.0	11.5	12.5	13.7

Source: United Nations Population Division, *World Population Prospects: The 1998 Revision*.

TABLE A.2. FRANCE, REPLACEMENT MIGRATION SCENARIOS

FRANCE

Scenario Period	I Medium variant	II Medium variant with zero migration	III Constant total population	IV Constant age group 15-64	V Constant ratio 15-64/65 years or older
A. Average annual net migration (thousands)					
1995-2000	40	0	0	0	842
2000-2005	30	0	0	0	333
2005-2010	20	0	0	0	219
2010-2015	10	0	0	179	1 934
2015-2020	5	0	0	207	1 988
2020-2025	0	0	0	182	1 937
2025-2030	0	0	6	155	2 002
2030-2035	0	0	42	113	2 046
2035-2040	0	0	70	117	2 204
2040-2045	0	0	86	54	2 057
2045-2050	0	0	91	86	3 196
Grand total 1995-2050	525	0	1 473	5 459	93 794
B. Total population (thousands)					
1995	58 020	58 020	58 020	58 020	58 020
2000	59 080	58 879	58 879	58 879	63 310
2005	59 925	59 571	59 571	59 571	66 179
2010	60 597	60 139	60 139	60 139	68 436
2015	61 108	60 597	60 597	61 545	79 702
2020	61 500	60 960	60 960	63 112	92 232
2025	61 662	61 121	61 121	64 442	105 188
2030	61 632	61 091	61 121	65 505	119 014
2035	61 401	60 862	61 121	66 192	133 522
2040	60 998	60 462	61 121	66 750	149 345
2045	60 474	59 943	61 121	66 890	164 994
2050	59 883	59 357	61 121	67 130	187 193
C. Age group 15-64 (thousands)					
1995	37 986	37 986	37 986	37 986	37 986
2000	38 620	38 488	38 488	38 488	41 593
2005	39 378	39 145	39 145	39 145	43 734
2010	39 925	39 625	39 625	39 625	45 381
2015	39 294	38 965	38 965	39 625	52 319
2020	38 483	38 145	38 145	39 625	59 918
2025	37 686	37 355	37 355	39 625	67 847
2030	36 919	36 594	36 615	39 625	76 551
2035	36 231	35 913	36 092	39 625	86 078
2040	35 512	35 199	35 652	39 625	96 507
2045	35 058	34 750	35 557	39 625	106 826
2050	34 586	34 282	35 493	39 625	121 047
D. Potential support ratio 15-64/65 or older					
1995	4.36	4.36	4.36	4.36	4.36
2000	4.10	4.10	4.10	4.10	4.36
2005	4.02	4.02	4.02	4.02	4.36
2010	3.96	3.96	3.96	3.96	4.36
2015	3.49	3.49	3.49	3.54	4.36
2020	3.11	3.11	3.11	3.20	4.36
2025	2.81	2.81	2.81	2.95	4.36
2030	2.59	2.59	2.59	2.76	4.36
2035	2.42	2.42	2.43	2.62	4.36
2040	2.31	2.31	2.33	2.53	4.36
2045	2.28	2.28	2.32	2.51	4.36
2050	2.26	2.26	2.33	2.49	4.36

TABLE A.2 (*continued*)

FRANCE

Scenario / Period	I Medium variant	II Medium variant with zero migration	III Constant total population	IV Constant age group 15-64	V Constant ratio 15-64/65 years or older
			E. Age group 65 or older (thousands)		
1995	8 708	8 708	8 708	8 708	8 708
2000	9 413	9 381	9 381	9 381	9 535
2005	9 807	9 749	9 749	9 749	10 026
2010	10 087	10 009	10 009	10 009	10 403
2015	11 252	11 158	11 158	11 191	11 994
2020	12 389	12 281	12 281	12 366	13 736
2025	13 388	13 271	13 271	13 417	15 554
2030	14 275	14 150	14 151	14 364	17 549
2035	14 956	14 825	14 834	15 114	19 733
2040	15 402	15 268	15 294	15 661	22 124
2045	15 378	15 243	15 294	15 786	24 490
2050	15 285	15 151	15 234	15 932	27 750
			F. Percentage in age group 65 or older		
1995	15.0	15.0	15.0	15.0	15.0
2000	15.9	15.9	15.9	15.9	15.1
2005	16.4	16.4	16.4	16.4	15.1
2010	16.6	16.6	16.6	16.6	15.2
2015	18.4	18.4	18.4	18.2	15.0
2020	20.1	20.1	20.1	19.6	14.9
2025	21.7	21.7	21.7	20.8	14.8
2030	23.2	23.2	23.2	21.9	14.7
2035	24.4	24.4	24.3	22.8	14.8
2040	25.2	25.3	25.0	23.5	14.8
2045	25.4	25.4	25.0	23.6	14.8
2050	25.5	25.5	24.9	23.7	14.8
			G. Age group 0-14 (thousands)		
1995	11 326	11 326	11 326	11 326	11 326
2000	11 047	11 009	11 009	11 009	12 182
2005	10 740	10 677	10 677	10 677	12 419
2010	10 585	10 505	10 505	10 505	12 652
2015	10 563	10 475	10 475	10 729	15 390
2020	10 627	10 534	10 534	11 120	18 578
2025	10 588	10 495	10 495	11 399	21 788
2030	10 438	10 347	10 355	11 515	24 914
2035	10 214	10 124	10 194	11 453	27 711
2040	10 084	9 996	10 175	11 464	30 714
2045	10 038	9 950	10 269	11 478	33 677
2050	10 012	9 924	10 393	11 572	38 396
			H. Potential support ratio in 2050, by age at entry into non-working-age population		
Age					
65	2.26	2.26	2.33	2.49	4.36
70	3.19	3.19	3.28	3.53	6.49
75	4.71	4.71	4.84	5.22	10.00
80	7.75	7.75	7.96	8.60	17.09

NOTE: The five scenarios are briefly as follows:

I - Corresponds to the medium variant of the official United Nations population projections (*World Population Prospects, 1998 Revision*);
II - This scenario amends the medium variant by assuming no migration after 1995;
III - This scenario keeps the total population figure constant at the highest level that it would reach in absence of migration after 1995.
IV - This scenario keeps the number of persons aged 15-64 constant at the highest level that it would reach in absence of migration after 1995.
V - This scenario keeps the ratio of persons aged 15-64 to persons aged 65 and above at the highest level that it would reach in absence of migration after 1995.

TABLE A.3. GERMANY, *1998 REVISION*

GERMANY

A. ESTIMATES

Indicator	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995
Population (thousands)										
Total	68 376	70 326	72 673	76 031	77 709	78 679	78 304	77 668	79 365	81 661
Males	31 493	32 573	33 800	35 795	36 718	37 322	37 264	37 051	38 276	39 731
Females	36 883	37 753	38 873	40 236	40 991	41 357	41 040	40 617	41 088	41 930
Sex ratio (per 100 females)	85.4	86.3	87.0	89.0	89.6	90.2	90.8	91.2	93.2	94.8
Age distribution:										
Percentage aged 0-4	6.6	7.4	7.8	8.5	7.7	5.6	5.1	5.3	5.6	5.0
Percentage aged 5-14	16.6	13.8	13.4	14.4	15.6	16.0	13.4	10.7	10.5	11.2
Percentage aged 15-24	14.3	15.8	15.8	13.1	12.8	14.5	16.1	16.5	13.7	11.3
Percentage aged 60 or over	14.6	15.8	17.3	18.8	19.9	20.4	19.3	19.9	20.4	20.9
Percentage aged 65 or over	9.7	10.7	11.5	12.5	13.7	14.8	15.6	14.6	15.0	15.5
Percentage of women aged 15-49	50.6	49.6	46.6	43.5	44.4	45.0	47.0	48.8	47.2	46.6
Median age (years)	35.4	34.5	34.7	34.4	34.3	35.4	36.4	37.1	37.7	38.4
Population density (per sq km)	192	197	204	213	218	221	220	218	222	229

Indicator	1950-1955	1955-1960	1960-1965	1965-1970	1970-1975	1975-1980	1980-1985	1985-1990	1990-1995
Population change per year (thousands)	390	469	672	336	194	- 75	- 127	339	459
Births per year (thousands)	1 106	1 183	1 330	1 232	886	813	839	874	807
Deaths per year (thousands)	771	829	880	950	961	957	938	916	894
Population growth rate (percentage)	0.56	0.66	0.90	0.44	0.25	- 0.10	- 0.16	0.43	0.57
Crude birth rate (per 1,000 population)	16.0	16.5	17.9	16.0	11.3	10.4	10.8	11.1	10.0
Crude death rate (per 1,000 population)	11.1	11.6	11.8	12.4	12.3	12.2	12.0	11.7	11.1
Total fertility rate (per woman)	2.16	2.30	2.49	2.32	1.64	1.52	1.46	1.43	1.30
Gross reproduction rate (per woman)	1.05	1.12	1.21	1.13	0.80	0.74	0.71	0.70	0.63
Net reproduction rate (per woman)	0.85	0.96	1.06	1.02	0.77	0.72	0.70	0.69	0.62
Infant mortality rate (per 1,000 births)	51	38	29	23	21	15	11	8	6
Life expectancy at birth (years)									
Males	65.3	66.6	67.4	67.8	67.9	69.0	70.3	71.7	72.6
Females	69.6	71.5	72.9	73.6	73.8	75.5	76.8	78.2	79.2
Both sexes combined	67.5	69.1	70.3	70.8	71.0	72.5	73.8	74.8	76.0

B. MEDIUM-VARIANT PROJECTIONS

Indicator	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	81 661	82 220	82 365	82 032	81 574	80 996	80 238	79 252	76 531	73 303
Males	39 731	40 266	40 550	40 539	40 410	40 177	39 827	39 357	37 995	36 387
Females	41 930	41 954	41 815	41 493	41 164	40 819	40 411	39 895	38 536	36 916
Sex ratio (per 100 females)	94.8	96.0	97.0	97.7	98.2	98.4	98.6	98.7	98.6	98.6
Age distribution:										
Percentage aged 0-4	5.0	4.6	4.2	4.1	4.2	4.4	4.4	4.3	4.2	4.4
Percentage aged 5-14	11.2	10.9	9.9	9.2	8.7	8.7	9.0	9.2	9.0	9.0
Percentage aged 15-24	11.3	11.1	11.8	11.5	10.6	9.9	9.4	9.4	10.1	10.1
Percentage aged 60 or over	20.9	23.2	24.6	25.3	26.8	28.9	31.8	34.4	34.8	35.3
Percentage aged 65 or over	15.5	16.4	18.5	19.8	20.3	21.6	23.4	26.1	28.8	28.4
Percentage in school ages 6-11	6.8	6.4	5.8	5.4	5.1	5.2	5.4	5.5	5.3	5.4
Percentage in school ages 12-14	3.3	3.5	3.2	3.0	2.7	2.6	2.7	2.8	2.8	2.8
Percentage in school ages 15-17	3.2	3.4	3.5	3.1	2.9	2.7	2.7	2.8	2.9	2.8
Percentage in school ages 18-23	6.8	6.6	7.1	7.2	6.5	6.1	5.7	5.7	6.1	6.1
Percentage of women aged 15-49	46.6	46.7	46.4	44.9	42.1	39.2	38.1	37.8	36.6	36.6
Median age (years)	38.4	40.0	42.1	44.1	45.9	46.9	47.3	47.6	48.7	48.4
Population density (per sq km)	229	230	231	230	229	227	225	222	215	205

Indicator	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population change per year (thousands)	112	29	-67	-92	-116	-152	-197	-272	-323
Births per year (thousands)	754	693	664	684	701	698	678	639	634
Deaths per year (thousands)	882	904	930	975	1 017	1 049	1 075	1 111	1 157
Net migration per year (thousands)	240	240	200	200	200	200	200	200	200
Population growth rate (percentage)	0.14	0.04	- 0.08	- 0.11	- 0.14	- 0.19	- 0.25	- 0.35	- 0.43
Crude birth rate (per 1,000 population)	9.2	8.4	8.1	8.4	8.6	8.7	8.5	8.2	8.5
Crude death rate (per 1,000 population)	10.8	11.0	11.3	11.9	12.5	13.0	13.5	14.3	15.4
Net migration rate (per 1,000 population)	2.9	2.9	2.4	2.4	2.5	2.5	2.5	2.6	2.7
Total fertility rate (per woman)	1.30	1.33	1.37	1.44	1.51	1.58	1.63	1.64	1.64
Gross reproduction rate (per woman)	0.63	0.65	0.66	0.70	0.73	0.77	0.80	0.80	0.80
Net reproduction rate (per woman)	0.63	0.64	0.66	0.69	0.73	0.76	0.79	0.79	0.79
Infant mortality rate (per 1,000 births)	5	5	5	5	5	5	5	4	4
Mortality under age 5 (per 1,000 births)	6	6	5	5	5	5	5	5	5
Life expectancy at birth (years)									
Males	73.9	74.7	75.5	76.0	76.5	77.0	77.5	78.1	78.9
Females	80.2	80.7	81.2	81.7	82.2	82.7	83.1	83.7	84.5
Both sexes combined	77.2	77.8	78.4	78.9	79.4	79.8	80.3	80.9	81.7

Source: United Nations Population Division, *World Population Prospects: The 1998 Revision*.

TABLE A.3 (*continued*)

GERMANY

C. HIGH-VARIANT PROJECTIONS

	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	81 661	82 393	83 056	83 364	83 606	83 811	83 955	84 061	83 977	83 817
Males	39 731	40 355	40 905	41 223	41 453	41 622	41 734	41 825	41 814	41 777
Females	41 930	42 038	42 152	42 141	42 154	42 189	42 220	42 237	42 162	42 039
Age distribution:										
Percentage aged 0-4	5.0	4.8	4.8	4.8	5.0	5.1	5.3	5.4	5.4	5.7
Percentage aged 5-14	11.2	10.9	10.1	9.9	9.8	10.0	10.3	10.7	11.0	11.3
Percentage aged 15-24	11.3	11.1	11.7	11.3	10.6	10.4	10.3	10.5	11.2	11.6
Percentage aged 60 or over	20.9	23.1	24.4	24.9	26.2	27.9	30.4	32.4	31.7	30.9
Percentage aged 65 or over	15.5	16.3	18.4	19.5	19.8	20.8	22.3	24.7	26.2	24.8
Percentage of women aged 15-49	46.6	46.7	46.0	44.3	41.3	38.7	38.0	38.0	37.7	38.9
Median age (years)	38.4	39.9	41.8	43.6	45.2	45.6	45.4	45.3	44.9	43.2
	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050	
Population change per year (thousands)	146	133	61	49	41	29	21	- 8	- 16	
Population growth rate (percentage)	0.18	0.16	0.07	0.06	0.05	0.03	0.03	- 0.01	- 0.02	
Crude birth rate (per 1,000 population)	9.6	9.6	9.5	9.9	10.3	10.5	10.7	10.8	11.3	
Crude death rate (per 1,000 population)	10.8	10.9	11.2	11.7	12.2	12.5	12.8	13.3	13.8	
Net migration rate (per 1,000 population)	2.9	2.9	2.4	2.4	2.4	2.4	2.4	2.4	2.4	
Total fertility rate (per woman)	1.36	1.53	1.63	1.73	1.83	1.93	2.02	2.04	2.04	
Gross reproduction rate (per woman)	0.66	0.75	0.79	0.84	0.89	0.94	0.98	0.99	0.99	
Net reproduction rate (per woman)	0.66	0.74	0.79	0.83	0.88	0.93	0.98	0.98	0.99	

D. LOW-VARIANT PROJECTIONS

	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	81 661	82 071	81 879	81 147	80 131	78 831	77 193	75 196	70 312	64 615
Males	39 731	40 189	40 300	40 085	39 669	39 066	38 264	37 275	34 805	31 932
Females	41 930	41 881	41 579	41 062	40 462	39 765	38 929	37 920	35 507	32 683
Age distribution:										
Percentage aged 0-4	5.0	4.4	3.8	3.6	3.6	3.6	3.4	3.2	2.9	3.0
Percentage aged 5-14	11.2	10.9	9.8	8.7	7.9	7.7	7.7	7.5	6.9	6.6
Percentage aged 15-24	11.3	11.1	11.9	11.7	10.6	9.5	8.8	8.7	8.7	8.2
Percentage aged 60 or over	20.9	23.2	24.7	25.6	27.3	29.6	33.1	36.2	37.9	40.1
Percentage aged 65 or over	15.5	16.4	18.6	20.0	20.7	22.2	24.3	27.6	31.3	32.2
Percentage of women aged 15-49	46.6	46.8	46.7	45.4	42.6	39.6	38.4	37.9	35.6	33.9
Median age (years)	38.4	40.1	42.2	44.4	46.5	47.9	48.9	49.6	51.7	53.2
	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050	
Population change per year (thousands)	82	-38	-146	-203	-260	-328	-400	-488	-570	
Population growth rate (percentage)	0.10	- 0.05	- 0.18	- 0.25	- 0.33	- 0.42	- 0.52	- 0.67	- 0.85	
Crude birth rate (per 1,000 population)	8.8	7.6	7.2	7.1	7.0	6.7	6.2	5.8	5.7	
Crude death rate (per 1,000 population)	10.8	11.0	11.4	12.1	12.8	13.4	14.1	15.2	17.1	
Net migration rate (per 1,000 population)	2.9	2.9	2.5	2.5	2.5	2.6	2.6	2.7	3.0	
Total fertility rate (per woman)	1.25	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	
Gross reproduction rate (per woman)	0.61	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	
Net reproduction rate (per woman)	0.60	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	

E. CONSTANT-VARIANT PROJECTIONS

	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	81 661	82 215	82 282	81 792	81 013	79 959	78 586	76 881	72 624	67 552
	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050	
Population growth rate (percentage)	0.14	0.02	- 0.12	- 0.19	- 0.26	- 0.35	- 0.44	- 0.57	- 0.72	
Crude birth rate (per 1,000 population)	9.2	8.2	7.7	7.6	7.5	7.2	6.9	6.5	6.4	
Crude death rate (per 1,000 population)	10.8	11.0	11.3	12.0	12.6	13.2	13.8	14.8	16.5	

Source: United Nations Population Division, *World Population Prospects: The 1998 Revision*.

TABLE A.4. GERMANY, REPLACEMENT MIGRATION SCENARIOS

GERMANY

Scenario	I	II	III	IV	V
Period	Medium variant	Medium variant with zero migration	Constant total population	Constant age group 15-64	Constant ratio 15-64/65 years or older
A. Average annual net migration (thousands)					
1995-2000	240	0	130	176	1 398
2000-2005	240	0	215	417	3 251
2005-2010	200	0	268	334	1 879
2010-2015	200	0	286	294	806
2015-2020	200	0	301	578	2 081
2020-2025	200	0	325	740	3 347
2025-2030	200	0	357	896	5 646
2030-2035	200	0	399	747	6 462
2035-2040	200	0	422	287	4 718
2040-2045	200	0	432	213	4 016
2045-2050	200	0	431	360	4 096
Grand total 1995-2050	11 400	0	17 838	25 209	188 497
B. Total population (thousands)					
1995	81 661	81 661	81 661	81 661	81 661
2000	82 220	80 985	81 661	81 898	88 241
2005	82 365	79 819	81 661	82 965	104 482
2010	82 032	78 302	81 661	83 397	114 386
2015	81 574	76 601	81 661	83 539	119 011
2020	80 996	74 733	81 661	85 076	130 126
2025	80 238	72 643	81 661	87 451	148 307
2030	79 252	70 287	81 661	90 645	179 530
2035	77 989	67 636	81 661	93 030	216 669
2040	76 531	64 785	81 661	92 923	246 258
2045	74 948	61 817	81 661	92 178	272 559
2050	73 303	58 812	81 661	92 022	299 272
C. Age group 15-64 (thousands)					
1995	55 763	55 763	55 763	55 763	55 763
2000	56 025	55 114	55 595	55 763	60 271
2005	55 424	53 520	54 835	55 763	71 107
2010	54 917	52 103	54 516	55 763	78 064
2,015	54 503	50 736	54 391	55 763	81 650
2020	52 995	48 249	53 277	55 763	88 910
2025	50 773	45 042	51 588	55 763	100 331
2030	47 855	41 145	49 357	55 763	119 722
2035	45 353	37 698	47 718	55 763	143 049
2040	44 425	35 922	47 813	55 763	162 446
2045	43 767	34 514	48 307	55 763	180 580
2050	42 706	32 744	48 426	55 763	199 400
D. Potential support ratio 15-64/65 or older					
1995	4.41	4.41	4.41	4.41	4.41
2000	4.17	4.11	4.14	4.15	4.41
2005	3.63	3.53	3.60	3.65	4.41
2010	3.38	3.23	3.35	3.42	4.41
2015	3.29	3.10	3.27	3.34	4.41
2020	3.03	2.81	3.04	3.15	4.41
2025	2.71	2.45	2.74	2.91	4.41
2030	2.31	2.04	2.37	2.61	4.41
2035	2.04	1.76	2.12	2.40	4.41
2040	2.02	1.72	2.14	2.39	4.41
2045	2.05	1.75	2.22	2.43	4.41
2050	2.05	1.75	2.26	2.44	4.41

TABLE A.4 (*continued*)

GERMANY

Scenario	I	II	III	IV	V
Period	Medium variant	Medium variant with zero migration	Constant total population	Constant age group 15-64	Constant ratio 15-64/65 years or older
E. Age group 65 or older (thousands)					
1995	12 634	12 634	12 634	12 634	12 634
2000	13 444	13 403	13 427	13 435	13 656
2005	15 266	15 176	15 247	15 295	16 111
2010	16 247	16 108	16 250	16 326	17 687
2015	16 575	16 380	16 612	16 709	18 499
2020	17 468	17 190	17 536	17 702	20 144
2025	18 762	18 354	18 854	19 144	22 732
2030	20 721	20 133	20 858	21 351	27 125
2035	22 233	21 405	22 467	23 205	32 411
2040	22 027	20 849	22 378	23 337	36 805
2045	21 323	19 692	21 793	22 968	40 914
2050	20 794	18 689	21 428	22 861	45 178
F. Percentage in age group 65 or older					
1995	15.5	15.5	15.5	15.5	15.5
2000	16.4	16.6	16.4	16.4	15.5
2005	18.5	19.0	18.7	18.4	15.4
2010	19.8	20.6	19.9	19.6	15.5
2015	20.3	21.4	20.3	20.0	15.5
2020	21.6	23.0	21.5	20.8	15.5
2025	23.4	25.3	23.1	21.9	15.3
2030	26.1	28.6	25.5	23.6	15.1
2035	28.5	31.6	27.5	24.9	15.0
2040	28.8	32.2	27.4	25.1	14.9
2045	28.5	31.9	26.7	24.9	15.0
2050	28.4	31.8	26.2	24.8	15.1
G. Age group 0-14 (thousands)					
1995	13 264	13 264	13 264	13 264	13 264
2000	12 751	12 468	12 640	12 700	14 315
2005	11 675	11 123	11 579	11 907	17 265
2010	10 868	10 091	10 896	11 307	18 635
2015	10 496	9 485	10 657	11 067	18 862
2020	10 534	9 294	10 848	11 611	21 072
2025	10 704	9 248	11 219	12 543	25 244
2030	10 675	9 009	11 446	13 531	32 683
2035	10 403	8 533	11 475	14 063	41 210
2040	10 079	8 015	11 470	13 823	47 007
2045	9 858	7 611	11 562	13 447	51 065
2050	9 803	7 379	11 807	13 398	54 694
H. Potential support ratio in 2050, by age at entry into non-working-age population					
Age					
65	2.05	1.75	2.26	2.44	4.41
70	2.93	2.48	3.22	3.49	6.45
75	4.25	3.55	4.66	5.08	10.02
80	6.65	5.50	7.29	7.99	17.27

NOTE: The five scenarios are briefly as follows:

I - Corresponds to the medium variant of the official United Nations population projections (*World Population Prospects, 1998 Revision*);
II - This scenario amends the medium variant by assuming no migration after 1995;
III - This scenario keeps the total population figure constant at the highest level that it would reach in absence of migration after 1995.
IV - This scenario keeps the number of persons aged 15-64 constant at the highest level that it would reach in absence of migration after 1995.
V - This scenario keeps the ratio of persons aged 15-64 to persons aged 65 and above at the highest level that it would reach in absence of migration after 1995.

TABLE A.5. ITALY, *1998 REVISION*

ITALY

A. ESTIMATES

Indicator	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995
Population (thousands)										
Total	47 104	48 633	50 200	52 112	53 822	55 441	56 434	56 771	57 023	57 338
Males	22 934	23 815	24 584	25 508	26 325	27 072	27 472	27 586	27 677	27 840
Females	24 170	24 818	25 616	26 605	27 497	28 369	28 962	29 185	29 346	29 498
Sex ratio (per 100 females)	94.9	96.0	96.0	95.9	95.7	95.4	94.9	94.5	94.3	94.4
Age distribution:										
Percentage aged 0-4	9.2	8.3	8.4	8.9	8.5	7.8	6.4	5.3	4.8	4.9
Percentage aged 5-14	17.1	16.7	16.4	15.4	16.0	16.4	15.9	14.2	11.0	9.9
Percentage aged 15-24	17.0	16.7	15.5	15.1	14.8	14.2	15.3	16.4	15.6	13.5
Percentage aged 60 or over	12.2	12.7	13.6	14.6	16.1	17.4	17.0	18.4	21.1	22.5
Percentage aged 65 or over	8.3	8.7	9.3	10.0	10.9	12.0	13.1	12.7	15.3	16.8
Percentage of women aged 15-49	51.4	51.4	49.8	48.3	48.1	46.8	47.1	48.3	49.0	48.7
Median age (years)	29.0	30.0	31.3	32.1	32.8	33.4	34.0	35.2	37.4	38.8
Population density (per sq km)	156	161	167	173	179	184	187	188	189	190

	1950-1955	1955-1960	1960-1965	1965-1970	1970-1975	1975-1980	1980-1985	1985-1990	1990-1995
Population change per year (thousands)	306	313	383	342	324	199	67	50	63
Births per year (thousands)	877	890	963	968	877	728	606	570	559
Deaths per year (thousands)	472	474	501	514	537	546	539	539	596
Population growth rate (percentage)	0.64	0.63	0.75	0.65	0.59	0.36	0.12	0.09	0.11
Crude birth rate (per 1,000 population)	18.3	18.0	18.8	18.3	16.1	13.0	10.7	10.0	9.8
Crude death rate (per 1,000 population)	9.9	9.6	9.8	9.7	9.8	9.8	9.5	9.5	10.4
Total fertility rate (per woman)	2.32	2.35	2.55	2.49	2.28	1.92	1.55	1.35	1.28
Gross reproduction rate (per woman)	1.13	1.14	1.24	1.21	1.10	0.93	0.75	0.65	0.62
Net reproduction rate (per woman)	1.09	1.07	1.16	1.15	1.05	0.88	0.74	0.63	0.61
Infant mortality rate (per 1,000 births)	60	48	40	33	26	18	13	10	8
Life expectancy at birth (years)									
Males	64.3	66.3	67.4	68.2	69.2	70.4	71.5	73.1	74.2
Females	67.8	70.8	72.6	73.9	75.2	76.9	78.0	79.6	80.7
Both sexes combined	66.0	68.5	69.9	71.0	72.1	73.6	74.5	76.2	77.2

B. MEDIUM-VARIANT PROJECTIONS

	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	57 338	57 298	56 780	55 782	54 448	52 913	51 270	49 533	45 642	41 197
Males	27 840	27 806	27 564	27 087	26 446	25 714	24 928	24 082	22 150	19 951
Females	29 498	29 492	29 216	28 695	28 002	27 199	26 342	25 452	23 492	21 247
Sex ratio (per 100 females)	94.4	94.3	94.3	94.4	94.4	94.5	94.6	94.6	94.3	93.9
Age distribution:										
Percentage aged 0-4	4.9	4.5	4.2	3.9	3.7	3.7	3.8	3.8	3.8	3.8
Percentage aged 5-14	9.9	9.8	9.5	8.9	8.4	7.9	7.7	7.8	8.2	8.2
Percentage aged 15-24	13.5	11.1	10.1	10.0	9.9	9.4	8.9	8.4	8.4	9.0
Percentage aged 60 or over	22.5	24.2	25.5	27.4	29.1	31.4	34.6	37.7	41.5	41.2
Percentage aged 65 or over	16.8	18.2	19.7	20.8	22.6	24.1	26.1	29.1	34.5	34.9
Percentage in school ages 6-11	5.9	5.9	5.6	5.3	4.9	4.6	4.6	4.7	4.9	4.9
Percentage in school ages 12-14	3.1	2.9	3.0	2.8	2.7	2.5	2.4	2.4	2.5	2.6
Percentage in school ages 15-17	3.4	3.0	3.0	3.0	2.8	2.7	2.5	2.4	2.5	2.6
Percentage in school ages 18-23	8.6	6.8	6.1	6.0	6.1	5.7	5.5	5.1	5.1	5.5
Percentage of women aged 15-49	48.7	46.9	45.4	43.8	40.9	38.1	35.2	33.6	32.5	32.2
Median age (years)	38.8	40.6	42.7	44.8	47.0	49.0	50.9	52.2	53.0	53.2
Population density (per sq km)	190	190	188	185	181	176	170	164	152	137

	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population change per year (thousands)	-8	-104	-200	-267	-307	-329	-347	-389	-445
Births per year (thousands)	517	484	437	405	391	387	381	360	323
Deaths per year (thousands)	595	621	652	679	702	716	728	749	767
Net migration per year (thousands)	70	34	16	8	4	0	0	0	0
Population growth rate (percentage)	- 0.01	- 0.18	- 0.36	- 0.48	- 0.57	- 0.63	- 0.69	- 0.82	- 1.03
Crude birth rate (per 1,000 population)	9.0	8.5	7.8	7.3	7.3	7.4	7.6	7.5	7.4
Crude death rate (per 1,000 population)	10.4	10.9	11.6	12.3	13.1	13.7	14.5	15.7	17.7
Net migration rate (per 1,000 population)	1.2	0.6	0.3	0.1	0.1	0.0	0.0	0.0	0.0
Total fertility rate (per woman)	1.20	1.22	1.26	1.33	1.40	1.47	1.54	1.63	1.66
Gross reproduction rate (per woman)	0.58	0.59	0.61	0.65	0.68	0.71	0.75	0.79	0.81
Net reproduction rate (per woman)	0.57	0.58	0.60	0.64	0.67	0.71	0.74	0.78	0.80
Infant mortality rate (per 1,000 births)	7	7	6	6	6	6	6	5	5
Mortality under age 5 (per 1,000 births)	8	8	8	7	7	7	6	6	6
Life expectancy at birth (years)									
Males	75.0	75.8	76.3	76.8	77.3	77.8	78.2	78.8	79.6
Females	81.2	81.7	82.2	82.7	83.1	83.5	83.9	84.5	85.3
Both sexes combined	78.2	78.8	79.3	79.8	80.2	80.7	81.1	81.7	82.4

Source: United Nations Population Division, *World Population Prospects: The 1998 Revision.*

TABLE A.5 (*continued*)

ITALY

C. HIGH-VARIANT PROJECTIONS

	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	57 338	57 405	57 201	56 582	55 626	54 490	53 306	52 128	49 651	46 772
Males	27 840	27 861	27 781	27 499	27 053	26 527	25 977	25 418	24 213	22 818
Females	29 498	29 544	29 420	29 083	28 573	27 964	27 329	26 711	25 438	23 954
Age distribution:										
Percentage aged 0-4	4.9	4.7	4.8	4.5	4.3	4.3	4.5	4.7	5.0	5.1
Percentage aged 5-14	9.9	9.7	9.6	9.6	9.5	9.1	8.9	9.1	10.0	10.5
Percentage aged 15-24	13.5	11.1	10.0	9.9	9.9	9.9	9.9	9.4	9.5	10.6
Percentage aged 60 or over	22.5	24.2	25.3	27.0	28.5	30.5	33.3	35.8	38.1	36.3
Percentage aged 65 or over	16.8	18.1	19.6	20.5	22.1	23.4	25.1	27.7	31.7	30.7
Percentage of women aged 15-49	48.7	46.9	45.1	43.2	40.3	37.8	35.3	34.2	33.9	34.9
Median age (years)	38.8	40.5	42.4	44.4	46.3	48.1	49.6	50.2	49.4	48.0

	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population change per year (thousands)	13	- 41	- 124	- 191	- 227	- 237	- 236	- 248	- 288
Population growth rate (percentage)	0.02	- 0.07	- 0.22	- 0.34	- 0.41	- 0.44	- 0.45	- 0.49	- 0.60
Crude birth rate (per 1,000 population)	9.4	9.5	9.0	8.6	8.6	8.9	9.4	9.9	10.0
Crude death rate (per 1,000 population)	10.4	10.9	11.5	12.1	12.8	13.3	13.8	14.7	16.0
Net migration rate (per 1,000 population)	1.2	0.6	0.3	0.1	0.1	0.0	0.0	0.0	0.0
Total fertility rate (per woman)	1.25	1.38	1.48	1.58	1.68	1.78	1.88	2.01	2.06
Gross reproduction rate (per woman)	0.61	0.67	0.72	0.77	0.81	0.86	0.91	0.97	1.00
Net reproduction rate (per woman)	0.60	0.66	0.71	0.76	0.81	0.85	0.90	0.97	0.99

D. LOW-VARIANT PROJECTIONS

	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	57 338	57 170	56 494	55 341	53 765	51 904	49 841	47 594	42 508	36 789
Males	27 840	27 740	27 416	26 860	26 095	25 194	24 192	23 083	20 536	17 683
Females	29 498	29 430	29 077	28 481	27 670	26 709	25 649	24 511	21 972	19 106
Age distribution:										
Percentage aged 0-4	4.9	4.3	4.0	3.6	3.3	3.1	3.0	2.9	2.6	2.5
Percentage aged 5-14	9.9	9.8	9.3	8.5	7.9	7.3	6.8	6.5	6.2	5.8
Percentage aged 15-24	13.5	11.1	10.2	10.1	9.8	9.1	8.5	7.9	7.3	7.1
Percentage aged 60 or over	22.5	24.3	25.6	27.6	29.5	32.0	35.6	39.3	44.6	46.2
Percentage aged 65 or over	16.8	18.2	19.8	21.0	22.9	24.5	26.8	30.3	37.0	39.1
Percentage of women aged 15-49	48.7	47.0	45.7	44.1	41.2	38.3	35.3	33.6	31.6	29.7
Median age (years)	38.8	40.7	42.8	45.1	47.4	49.6	51.7	53.6	55.9	57.4

	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population change per year (thousands)	-34	-135	-230	-315	-372	-413	-449	-509	-572
Population growth rate (percentage)	- 0.06	- 0.24	- 0.41	- 0.58	- 0.71	- 0.81	- 0.92	- 1.13	- 1.45
Crude birth rate (per 1,000 population)	8.6	8.0	7.3	6.5	6.1	5.9	5.7	5.3	4.9
Crude death rate (per 1,000 population)	10.4	10.9	11.7	12.4	13.3	14.1	14.9	16.6	19.3
Net migration rate (per 1,000 population)	1.2	0.6	0.3	0.1	0.1	0.0	0.0	0.0	0.0
Total fertility rate (per woman)	1.14	1.14	1.17	1.17	1.17	1.17	1.17	1.17	1.17
Gross reproduction rate (per woman)	0.55	0.55	0.57	0.57	0.57	0.57	0.57	0.57	0.57
Net reproduction rate (per woman)	0.55	0.55	0.56	0.56	0.56	0.56	0.56	0.56	0.56

E. CONSTANT-VARIANT PROJECTIONS

	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	57 338	57 470	57 069	56 105	54 697	53 007	51 149	49 146	44 542	39 227

	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population growth rate (percentage)	0.05	- 0.14	- 0.34	- 0.51	- 0.63	- 0.71	- 0.80	- 0.98	- 1.27
Crude birth rate (per 1,000 population)	9.6	8.9	7.8	7.0	6.7	6.6	6.5	6.1	5.6
Crude death rate (per 1,000 population)	10.4	10.9	11.5	12.3	13.0	13.7	14.5	16.0	18.3

Source: United Nations Population Division, *World Population Prospects: The 1998 Revision*.

TABLE A.6. ITALY, MIGRATION REPLACEMENT SCENARIOS

ITALY

Scenario	I	II	III	IV	V
Period	Medium variant	Medium variant with zero migration	Constant total population	Constant age group 15-64	Constant ratio 15-64/65 years or older
			A. Average annual net migration (thousands)		
1995-2000	70	0	75	203	1 261
2000-2005	34	0	127	266	1 402
2005-2010	16	0	193	179	757
2010-2015	8	0	236	341	1 362
2015-2020	4	0	255	335	1 146
2020-2025	0	0	256	456	1 886
2025-2030	0	0	260	613	3 267
2030-2035	0	0	269	581	3 892
2035-2040	0	0	289	507	4 132
2040-2045	0	0	309	268	2 740
2045-2050	0	0	318	173	2 094
Grand total 1995-2050	660	0	12 944	19 610	119 684
			B. Total population (thousands)		
1995	57 338	57 338	57 338	57 338	57 338
2000	57 298	56 950	57 338	58 000	63 477
2005	56 780	56 267	57 338	58 767	70 487
2010	55 782	55 200	57 338	58 783	74 207
2015	54 448	53 840	57 338	59 393	80 939
2020	52 913	52 303	57 338	59 902	86 764
2025	51 270	50 679	57 338	61 064	96 664
2030	49 533	48 962	57 338	63 104	114 329
2035	47 671	47 122	57 338	65 066	136 391
2040	45 642	45 116	57 338	66 630	160 856
2045	43 460	42 959	57 338	66 846	178 891
2050	41 197	40 722	57 338	66 395	193 518
			C. Age group 15-64 (thousands)		
1995	39 234	39 234	39 234	39 234	39 234
2000	38 721	38 486	38 762	39 234	43 139
2005	37 781	37 439	38 208	39 234	47 661
2010	37 015	36 630	38 174	39 234	50 477
2015	35 576	35 179	37 715	39 234	55 064
2020	34 061	33 669	37 332	39 234	59 072
2025	32 026	31 659	36 506	39 234	65 358
2030	29 365	29 026	35 101	39 234	76 176
2035	26 773	26 464	33 799	39 234	89 650
2040	24 432	24 147	32 790	39 234	104 784
2045	22 946	22 681	32 675	39 234	116 546
2050	21 875	21 623	32 985	39 234	126 808
			D. Potential support ratio 15-64/65 or older		
1995	4.08	4.08	4.08	4.08	4.08
2000	3.72	3.72	3.74	3.78	4.08
2005	3.37	3.37	3.43	3.50	4.08
2010	3.19	3.19	3.30	3.37	4.08
2015	2.90	2.90	3.06	3.16	4.08
2020	2.67	2.68	2.91	3.02	4.08
2025	2.39	2.40	2.69	2.84	4.08
2030	2.04	2.04	2.37	2.59	4.08
2035	1.76	1.76	2.13	2.39	4.08
2040	1.55	1.55	1.97	2.24	4.08
2045	1.50	1.50	1.96	2.22	4.08
2050	1.52	1.52	2.03	2.25	4.08

TABLE A.6 (*continued*)

ITALY

Scenario Period	I Medium variant	II Medium variant with zero migration	III Constant total population	IV Constant age group 15-64	V Constant ratio 15-64/65 years or older
			E. Age group 65 or older (thousands)		
1995	9 621	9 621	9 621	9 621	9 621
2000	10 412	10 349	10 362	10 386	10 578
2005	11 213	11 113	11 155	11 212	11 687
2010	11 609	11 487	11 578	11 651	12 377
2015	12 286	12 150	12 310	12 417	13 502
2020	12 733	12 586	12 837	12 984	14 485
2025	13 373	13 218	13 586	13 817	16 026
2030	14 415	14 249	14 780	15 167	18 679
2035	15 249	15 074	15 839	16 442	21 983
2040	15 745	15 566	16 661	17 509	25 694
2045	15 303	15 128	16 647	17 690	28 578
2050	14 377	14 211	16 230	17 444	31 094
			F. Percentage in age group 65 or older		
1995	16.8	16.8	16.8	16.8	16.8
2000	18.2	18.2	18.1	17.9	16.7
2005	19.7	19.7	19.5	19.1	16.6
2010	20.8	20.8	20.2	19.8	16.7
2015	22.6	22.6	21.5	20.9	16.7
2020	24.1	24.1	22.4	21.7	16.7
2025	26.1	26.1	23.7	22.6	16.6
2030	29.1	29.1	25.8	24.0	16.3
2035	32.0	32.0	27.6	25.3	16.1
2040	34.5	34.5	29.1	26.3	16.0
2045	35.2	35.2	29.0	26.5	16.0
2050	34.9	34.9	28.3	26.3	16.1
			G. Age group 0-14 (thousands)		
1995	8 483	8 483	8 483	8 483	8 483
2000	8 165	8 116	8 214	8 380	9 760
2005	7 785	7 716	7 976	8 320	11 140
2010	7 157	7 083	7 586	7 898	11 353
2015	6 586	6 512	7 313	7 741	12 373
2020	6 119	6 048	7 169	7 683	13 207
2025	5 871	5 802	7 246	8 013	15 280
2030	5 754	5 687	7 458	8 703	19 474
2035	5 650	5 585	7 700	9 390	24 758
2040	5 466	5 403	7 887	9 887	30 379
2045	5 211	5 150	8 016	9 922	33 767
2050	4 945	4 888	8 124	9 717	35 615
			H. Potential support ratio in 2050, by age at entry into non-working-age population		
Age					
65	1.52	1.52	2.03	2.25	4.08
70	2.08	2.08	2.81	3.11	5.83
75	3.06	3.06	4.13	4.59	8.94
80	5.26	5.26	7.06	7.85	15.86

NOTE: The five scenarios are briefly as follows:

I - Corresponds to the medium variant of the official United Nations population projections (*World Population Prospects, 1998 Revision*);
II - This scenario amends the medium variant by assuming no migration after 1995;
III - This scenario keeps the total population figure constant at the highest level that it would reach in absence of migration after 1995.
IV - This scenario keeps the number of persons aged 15-64 constant at the highest level that it would reach in absence of migration after 1995.
V - This scenario keeps the ratio of persons aged 15-64 to persons aged 65 and above at the highest level that it would reach in absence of migration after 1995.

JAPAN

A. ESTIMATES

Indicator	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995
Population (thousands)										
Total	83 625	89 815	94 096	98 881	104 331	111 524	116 807	120 837	123 537	125 472
Males	41 003	44 111	46 176	48 531	51 205	54 880	57 468	59 393	60 658	61 526
Females	42 622	45 704	47 920	50 350	53 126	56 644	59 339	61 444	62 879	63 946
Sex ratio (per 100 females)	96.2	96.5	96.4	96.4	96.4	96.9	96.8	96.7	96.5	96.2
Age distribution:										
Percentage aged 0-4	13.4	10.6	8.5	8.3	8.5	8.9	7.4	6.2	5.3	4.8
Percentage aged 5-14	22.1	23.0	21.7	17.6	15.5	15.4	16.2	15.4	13.1	11.2
Percentage aged 15-24	19.6	19.1	18.9	20.2	19.0	15.4	13.8	14.2	15.2	14.7
Percentage aged 60 or over	7.7	8.1	8.9	9.6	10.7	11.7	12.9	14.8	17.4	20.5
Percentage aged 65 or over	4.9	5.3	5.7	6.2	7.1	7.9	9.0	10.3	12.0	14.6
Percentage of women aged 15-49	50.2	51.2	53.0	55.6	55.9	53.6	51.6	50.1	50.0	48.5
Median age (years)	22.3	23.6	25.5	27.3	29.0	30.4	32.6	35.2	37.4	39.7
Population density (per sq km)	221	238	249	262	276	295	309	320	327	332

Indicator	1950-1955	1955-1960	1960-1965	1965-1970	1970-1975	1975-1980	1980-1985	1985-1990	1990-1995
Population change per year (thousands)	1 238	856	957	1 090	1 439	1 057	806	540	387
Births per year (thousands)	2 052	1 664	1 662	1 805	2 073	1 733	1 509	1 321	1 213
Deaths per year (thousands)	812	715	702	697	712	697	730	773	863
Population growth rate (percentage)	1.43	0.93	0.99	1.07	1.33	0.93	0.68	0.44	0.31
Crude birth rate (per 1,000 population)	23.7	18.1	17.2	17.8	19.2	15.2	12.7	10.8	9.7
Crude death rate (per 1,000 population)	9.4	7.8	7.3	6.9	6.6	6.1	6.1	6.3	6.9
Total fertility rate (per woman)	2.75	2.08	2.02	2.00	2.07	1.81	1.76	1.66	1.49
Gross reproduction rate (per woman)	1.34	1.01	0.98	0.97	1.01	0.88	0.86	0.81	0.73
Net reproduction rate (per woman)	1.19	0.95	0.94	0.97	0.98	0.87	0.85	0.80	0.72
Infant mortality rate (per 1,000 births)	51	37	25	16	12	9	7	5	4
Life expectancy at birth (years)									
Males	62.1	64.6	66.5	68.5	70.6	72.8	74.2	75.4	76.4
Females	65.9	69.1	71.6	73.9	76.2	78.2	79.7	81.2	82.4
Both sexes combined	63.9	66.8	69.0	71.1	73.3	75.5	76.9	78.3	79.5

B. MEDIUM-VARIANT PROJECTIONS

Indicator	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	125 472	126 714	127 457	127 315	126 070	123 893	121 150	118 145	111 691	104 921
Males	61 526	62 093	62 423	62 303	61 619	60 471	59 058	57 541	54 395	51 162
Females	63 946	64 621	65 034	65 013	64 451	63 422	62 092	60 604	57 296	53 759
Sex ratio (per 100 females)	96.2	96.1	96.0	95.8	95.6	95.3	95.1	94.9	94.9	95.2
Age distribution:										
Percentage aged 0-4	4.8	4.9	5.0	4.9	4.6	4.3	4.3	4.5	4.6	4.4
Percentage aged 5-14	11.2	9.9	9.6	9.9	10.0	9.6	9.2	9.0	9.4	9.4
Percentage aged 15-24	14.7	12.6	11.0	9.8	9.7	10.2	10.4	10.1	9.5	10.0
Percentage aged 60 or over	20.5	23.1	25.8	29.3	31.2	32.1	32.9	34.2	37.4	37.6
Percentage aged 65 or over	14.6	17.1	19.2	21.5	24.6	26.2	26.7	27.3	30.3	31.8
Percentage in school ages 6-11	6.5	5.8	5.8	6.0	6.0	5.7	5.4	5.3	5.7	5.6
Percentage in school ages 12-14	3.7	3.2	2.8	2.9	3.0	3.0	2.9	2.7	2.8	2.9
Percentage in school ages 15-17	3.9	3.4	3.0	2.8	3.0	3.1	3.0	2.9	2.8	3.0
Percentage in school ages 18-23	9.2	7.7	6.7	5.9	5.7	6.1	6.3	6.1	5.7	6.0
Percentage of women aged 15-49	48.5	45.3	43.0	41.5	40.3	39.1	37.0	35.6	34.8	35.6
Median age (years)	39.7	41.2	42.5	43.8	45.2	46.9	48.4	49.3	49.5	49.0
Population density (per sq km)	332	335	337	337	334	328	321	313	296	278

Indicator	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population change per year (thousands)	248	149	-28	-249	-435	-549	-601	-645	-677
Births per year (thousands)	1 254	1 288	1 246	1 154	1 080	1 054	1 061	1 041	946
Deaths per year (thousands)	1 005	1 139	1 274	1 403	1 515	1 603	1 662	1 686	1 623
Net migration per year (thousands)	0	0	0	0	0	0	0	0	0
Population growth rate (percentage)	0.20	0.12	- 0.02	- 0.20	- 0.35	- 0.45	- 0.50	- 0.56	- 0.63
Crude birth rate (per 1,000 population)	9.9	10.1	9.8	9.1	8.6	8.6	8.9	9.1	8.7
Crude death rate (per 1,000 population)	8.0	9.0	10.0	11.1	12.1	13.1	13.9	14.7	15.0
Net migration rate (per 1,000 population)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total fertility rate (per woman)	1.43	1.47	1.54	1.61	1.68	1.73	1.75	1.75	1.75
Gross reproduction rate (per woman)	0.70	0.71	0.75	0.78	0.82	0.84	0.85	0.85	0.85
Net reproduction rate (per woman)	0.69	0.71	0.74	0.77	0.81	0.84	0.85	0.85	0.85
Infant mortality rate (per 1,000 births)	4	4	4	4	4	4	4	4	4
Mortality under age 5 (per 1,000 births)	6	6	5	5	5	5	5	5	5
Life expectancy at birth (years)									
Males	76.8	77.2	77.6	78.0	78.4	78.8	79.2	79.8	80.6
Females	82.9	83.3	83.7	84.1	84.5	84.9	85.3	85.9	86.7
Both sexes combined	80.0	80.3	80.7	81.1	81.5	81.9	82.3	82.8	83.6

Source: United Nations Population Division, *World Population Prospects: The 1998 Revision.*

TABLE A.7 (*continued*)

JAPAN

C. HIGH-VARIANT PROJECTIONS

	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	125 472	126 954	128 243	128 727	128 143	126 675	124 832	123 157	120 207	117 119
Males	61 526	62 216	62 827	63 028	62 683	61 899	60 947	60 112	58 763	57 416
Females	63 946	64 738	65 417	65 700	65 460	64 777	63 885	63 045	61 444	59 703
Age distribution:										
Percentage aged 0-4	4.8	5.1	5.4	5.3	5.0	4.8	4.9	5.4	5.7	5.5
Percentage aged 5-14	11.2	9.9	9.7	10.4	10.7	10.4	10.0	9.9	11.3	11.5
Percentage aged 15-24	14.7	12.6	10.9	9.7	9.7	10.6	11.0	10.7	10.2	11.6
Percentage aged 60 or over	20.5	23.1	25.7	29.0	30.7	31.4	32.0	32.8	34.7	33.7
Percentage aged 65 or over	14.6	17.0	19.1	21.3	24.2	25.6	25.9	26.2	28.1	28.5
Percentage of women aged 15-49	48.5	45.3	42.8	41.1	39.9	38.8	37.0	35.8	35.4	37.3
Median age (years)	39.7	41.1	42.2	43.4	44.6	46.2	47.3	47.6	45.9	44.8

	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population change per year (thousands)	296	258	97	- 117	- 294	- 369	- 335	- 295	- 309
Population growth rate (percentage)	0.24	0.20	0.08	- 0.09	- 0.23	- 0.29	- 0.27	- 0.24	- 0.26
Crude birth rate (per 1,000 population)	10.3	11.0	10.7	10.0	9.6	9.8	10.7	11.5	11.1
Crude death rate (per 1,000 population)	8.0	8.9	9.9	10.9	11.9	12.8	13.4	13.9	13.7
Net migration rate (per 1,000 population)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total fertility rate (per woman)	1.49	1.59	1.69	1.79	1.89	1.99	2.09	2.15	2.15
Gross reproduction rate (per woman)	0.72	0.77	0.82	0.87	0.92	0.97	1.02	1.05	1.05
Net reproduction rate (per woman)	0.72	0.77	0.81	0.86	0.91	0.96	1.01	1.04	1.04

D. LOW-VARIANT PROJECTIONS

	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	125 472	126 474	126 583	125 655	123 497	120 265	116 290	111 858	102 145	91 916
Males	61 526	61 970	61 974	61 451	60 298	58 609	56 564	54 315	49 499	44 495
Females	63 946	64 504	64 609	64 204	63 199	61 656	59 727	57 543	52 646	47 421
Age distribution:										
Percentage aged 0-4	4.8	4.7	4.6	4.3	3.9	3.6	3.5	3.4	3.3	3.1
Percentage aged 5-14	11.2	9.9	9.5	9.4	9.0	8.5	7.9	7.4	7.4	7.1
Percentage aged 15-24	14.7	12.7	11.1	9.9	9.7	9.8	9.6	9.1	8.1	8.2
Percentage aged 60 or over	20.5	23.2	26.0	29.7	31.9	33.0	34.3	36.1	40.9	42.9
Percentage aged 65 or over	14.6	17.1	19.3	21.8	25.1	27.0	27.8	28.8	33.1	36.3
Percentage of women aged 15-49	48.5	45.4	43.3	42.0	40.9	39.5	37.1	35.3	33.4	32.5
Median age (years)	39.7	41.3	42.8	44.3	45.9	47.9	49.8	51.3	53.3	54.3

	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population change per year (thousands)	200	22	-186	-432	-646	-795	-886	-971	- 1 023
Population growth rate (percentage)	0.16	0.02	- 0.15	- 0.35	- 0.53	- 0.67	- 0.78	- 0.91	- 1.06
Crude birth rate (per 1,000 population)	9.6	9.2	8.6	7.8	7.1	6.8	6.8	6.6	6.1
Crude death rate (per 1,000 population)	8.0	9.0	10.1	11.3	12.4	13.5	14.5	15.7	16.7
Net migration rate (per 1,000 population)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total fertility rate (per woman)	1.38	1.32	1.34	1.35	1.35	1.35	1.35	1.35	1.35
Gross reproduction rate (per woman)	0.67	0.64	0.65	0.66	0.66	0.66	0.66	0.66	0.66
Net reproduction rate (per woman)	0.66	0.64	0.65	0.65	0.65	0.65	0.65	0.65	0.65

E. CONSTANT-VARIANT PROJECTIONS

	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	125 472	126 998	127 871	127 568	125 930	123 193	119 804	116 124	108 043	99 227

	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population growth rate (percentage)	0.24	0.14	- 0.05	- 0.26	- 0.44	- 0.56	- 0.62	- 0.72	- 0.85
Crude birth rate (per 1,000 population)	10.4	10.3	9.5	8.5	7.8	7.6	7.8	7.8	7.1
Crude death rate (per 1,000 population)	8.0	8.9	10.0	11.1	12.2	13.2	14.1	15.0	15.6

Source: United Nations Population Division, *World Population Prospects: The 1998 Revision.*

TABLE A.8. JAPAN, REPLACEMENT MIGRATION SCENARIOS

JAPAN

Scenario	I	II	III	IV	V
Period	Medium variant	Medium variant with zero migration	Constant total population	Constant age group 15-64	Constant ratio 15-64/65 years or older
			A. Average annual net migration (thousands)		
1995-2000	0	0	0	231	5 990
2000-2005	0	0	0	517	5 674
2005-2010	0	0	27	818	6 224
2010-2015	0	0	234	1 056	7 831
2015-2020	0	0	387	483	3 854
2020-2025	0	0	459	200	2 335
2025-2030	0	0	473	407	5 895
2030-2035	0	0	472	707	12 766
2035-2040	0	0	472	1 070	20 543
2040-2045	0	0	464	745	20 776
2045-2050	0	0	440	465	18 811
Grand total 1995-2050	0	0	17 141	33 487	553 495
			B. Total population (thousands)		
1995	125 472	125 472	125 472	125 472	125 472
2000	126 714	126 714	126 714	127 923	158 061
2005	127 457	127 457	127 457	131 475	191169
2010	127 315	127 315	127 457	135 956	228 535
2015	126 070	126 070	127 457	140 936	275 471
2020	123 893	123 893	127 457	142 402	303 440
2025	121 150	121 150	127 457	141 877	323 376
2030	118 145	118 145	127 457	142 094	361 530
2035	114 987	114 987	127 457	143 811	437 628
2040	111 691	111 691	127 457	147 553	559 848
2045	108 304	108 304	127 457	149 843	691 148
2050	104 921	104 921	127 457	150 697	817 965
			C. Age group 15-64 (thousands)		
1995	87 188	87 188	87 188	87 188	87 188
2000	86 335	86 335	86 335	87 188	108 454
2005	84 355	84 355	84 355	87 188	129 299
2010	81 099	81 099	81 199	87 188	152 670
2015	76 708	76 708	77 681	87 188	182 833
2020	74 101	74 101	76 587	87 188	202 426
2025	72 418	72 418	76 803	87 188	217 547
2030	70 018	70 018	76 509	87 188	243 694
2035	66 671	66 671	75 432	87 188	292 648
2040	62 250	62 250	73 410	87 188	369 375
2045	59 159	59 159	72 729	87 188	452 377
2050	57 087	57 087	72 908	87 188	535 088
			D. Potential support ratio 15-64/65 or older		
1995	4.77	4.77	4.77	4.77	4.77
2000	3.99	3.99	3.99	4.03	4.77
2005	3.45	3.45	3.45	3.54	4.77
2010	2.96	2.96	2.96	3.14	4.77
2015	2.47	2.47	2.50	2.75	4.77
2020	2.28	2.28	2.35	2.61	4.77
2025	2.24	2.24	2.35	2.59	4.77
2030	2.17	2.17	2.34	2.57	4.77
2035	2.05	2.05	2.27	2.49	4.77
2040	1.84	1.84	2.11	2.33	4.77
2045	1.74	1.74	2.06	2.23	4.77
2050	1.71	1.71	2.07	2.19	4.77

TABLE A.8 (*continued*)

JAPAN

Scenario	I	II	III	IV	V
Period	Medium variant	Medium variant with zero migration	Constant total population	Constant age group 15-64	Constant ratio 15-64/65 years or older
			E. Age group 65 or older (thousands)		
1995	18 264	18 264	18 264	18 264	18 264
2000	21 614	21 614	21 614	21 657	22 719
2005	24 479	24 479	24 479	24 634	27 086
2010	27 389	27 389	27 394	27 751	31 982
2015	31 029	31 029	31 080	31 699	38 300
2020	32 491	32 491	32 634	33 443	42 405
2025	32 383	32 383	32 660	33 624	45 572
2030	32 239	32 239	32 686	33 920	51 050
2035	32 534	32 534	33 194	34 959	61 305
2040	33 809	33 809	34 751	37 405	77 378
2045	33 966	33 966	35 311	39 013	94 765
2050	33 323	33 323	35 253	39 890	112 092
			F. Percentage in age group 65 or older		
1995	14.6	14.6	14.6	14.6	14.6
2000	17.1	17.1	17.1	16.9	14.4
2005	19.2	19.2	19.2	18.7	14.2
2010	21.5	21.5	21.5	20.4	14.0
2015	24.6	24.6	24.4	22.5	13.9
2020	26.2	26.2	25.6	23.5	14.0
2025	26.7	26.7	25.6	23.7	14.1
2030	27.3	27.3	25.6	23.9	14.1
2035	28.3	28.3	26.0	24.3	14.0
2040	30.3	30.3	27.3	25.4	13.8
2045	31.4	31.4	27.7	26.0	13.7
2050	31.8	31.8	27.7	26.5	13.7
			G. Age group 0-14 (thousands)		
1995	20 019	20 019	20 019	20 019	20 019
2000	18 765	18 765	18 765	19 078	26 888
2005	18 623	18 623	18 623	19 652	34 784
2010	18 827	18 827	18 864	21 016	43 883
2015	18 332	18 332	18 697	22 048	54 338
2020	17 300	17 300	18 236	21 771	58 609
2025	16 349	16 349	17 994	21 065	60 256
2030	15 888	15 888	18 262	20 986	66 786
2035	15 781	15 781	18 831	21 665	83 675
2040	15 632	15 632	19 296	22 960	113 096
2045	15 179	15 179	19 417	23 642	144 006
2050	14 511	14 511	19 297	23 619	170 785
			H. Potential support ratio in 2050, by age at entry into non-working-age population		
Age					
65	1.71	1.71	2.07	2.19	4.77
70	2.40	2.40	2.89	3.10	7.04
75	3.64	3.64	4.36	4.77	11.40
80	6.48	6.48	7.68	8.50	21.49

NOTE: The five scenarios are briefly as follows:

I - Corresponds to the medium variant of the official United Nations population projections (*World Population Prospects, 1998 Revision*);
II - This scenario amends the medium variant by assuming no migration after 1995;
III - This scenario keeps the total population figure constant at the highest level that it would reach in absence of migration after 1995.
IV - This scenario keeps the number of persons aged 15-64 constant at the highest level that it would reach in absence of migration after 1995.
V - This scenario keeps the ratio of persons aged 15-64 to persons aged 65 and above at the highest level that it would reach in absence of migration after 1995.

TABLE A.9. REPUBLIC OF KOREA, *1998 REVISION*

REPUBLIC OF KOREA

A. ESTIMATES

Indicator	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995
Population (thousands)										
Total	20 357	21 422	25 003	28 530	31 923	35 281	38 124	40 806	42 869	44 949
Males	10 285	10 497	12 403	14 273	16 057	17 775	19 259	20 576	21 568	22 646
Females	10 072	10 925	12 601	14 256	15 865	17 506	18 865	20 230	21 301	22 303
Sex ratio (per 100 females)	102.1	96.1	98.4	100.1	101.2	101.5	102.1	101.7	101.3	101.5
Age distribution:										
Percentage aged 0-4	15.7	15.6	18.6	16.5	13.7	12.7	11.3	9.1	7.7	7.7
Percentage aged 5-14	26.0	23.8	23.3	26.8	28.3	25.1	22.7	20.9	18.2	15.8
Percentage aged 15-24	18.6	20.6	18.8	17.2	17.8	21.3	23.0	21.1	20.4	18.7
Percentage aged 60 or over	5.4	5.6	5.3	5.1	5.4	5.8	6.0	6.8	7.7	8.9
Percentage aged 65 or over	3.0	3.7	3.3	3.3	3.3	3.6	3.8	4.3	5.0	5.6
Percentage of women aged 15-49	46.0	49.2	47.0	45.7	46.6	49.9	52.9	54.9	56.9	57.7
Median age (years)	19.2	19.8	19.2	18.7	19.0	19.9	21.8	24.5	26.9	29.2
Population density (per sq km)	206	216	253	288	322	356	385	412	433	454

Indicator	1950-1955	1955-1960	1960-1965	1965-1970	1970-1975	1975-1980	1980-1985	1985-1990	1990-1995
Population change per year (thousands)	213	716	705	679	672	569	536	413	416
Births per year (thousands)	773	1 065	1 059	963	969	877	840	690	700
Deaths per year (thousands)	668	345	335	314	297	259	258	256	274
Population growth rate (percentage)	1.02	3.09	2.64	2.25	2.00	1.55	1.36	0.99	0.95
Crude birth rate (per 1,000 population)	37.0	45.9	39.6	31.9	28.8	23.9	21.3	16.5	15.9
Crude death rate (per 1,000 population)	32.0	14.9	12.5	10.4	8.9	7.1	6.5	6.1	6.3
Total fertility rate (per woman)	5.40	6.33	5.63	4.71	4.28	2.92	2.50	1.80	1.70
Gross reproduction rate (per woman)	2.51	2.95	2.62	2.19	1.99	1.36	1.17	0.84	0.79
Net reproduction rate (per woman)	1.79	2.28	2.11	1.83	1.73	1.26	1.10	0.80	0.77
Infant mortality rate (per 1,000 births)	115	100	70	58	38	30	23	14	11
Life expectancy at birth (years)									
Males	46.0	51.1	53.6	56.0	59.3	61.3	63.5	65.8	67.3
Females	49.0	54.2	56.9	59.4	66.1	68.4	71.1	73.7	74.9
Both sexes combined	47.5	52.6	55.2	57.6	62.6	64.8	65.9	69.6	70.9

B. MEDIUM-VARIANT PROJECTIONS

Indicator	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	44 949	46 844	48 548	49 976	51 051	51 893	52 533	52 898	52 700	51 275
Males	22 646	23 624	24 486	25 183	25 679	26 053	26 312	26 438	26 250	25 496
Females	22 303	23 220	24 061	24 793	25 372	25 840	26 221	26 460	26 450	25 779
Sex ratio (per 100 females)	101.5	101.7	101.8	101.6	101.2	100.8	100.3	99.9	99.2	98.9
Age distribution:										
Percentage aged 0-4	7.7	7.2	6.9	6.4	6.0	5.7	5.6	5.5	5.3	5.2
Percentage aged 5-14	15.8	14.3	14.0	13.3	12.7	12.0	11.4	11.2	11.0	10.8
Percentage aged 15-24	18.7	16.5	14.5	13.3	13.2	12.8	12.3	11.8	11.2	11.3
Percentage aged 60 or over	8.9	10.6	12.0	13.5	15.6	19.0	22.3	25.1	29.4	30.4
Percentage aged 65 or over	5.6	6.7	8.1	9.3	10.6	12.3	15.3	18.1	22.8	24.7
Percentage in school ages 6-11	9.1	8.6	8.4	8.0	7.6	7.1	6.8	6.7	6.6	6.4
Percentage in school ages 12-14	5.2	4.2	4.2	4.0	3.9	3.7	3.5	3.4	3.3	3.3
Percentage in school ages 15-17	5.2	4.8	3.9	4.1	3.9	3.8	3.6	3.4	3.3	3.3
Percentage in school ages 18-23	11.5	9.9	8.9	7.8	8.0	7.7	7.5	7.1	6.7	6.8
Percentage of women aged 15-49	57.7	57.7	55.8	52.4	49.0	46.2	43.2	41.3	39.4	39.1
Median age (years)	29.2	31.4	33.7	36.0	38.0	39.7	41.3	42.3	43.6	44.4
Population density (per sq km)	454	473	490	505	516	524	531	534	532	518

Indicator	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population change per year (thousands)	379	341	286	215	168	128	73	-20	-143
Births per year (thousands)	685	673	650	617	599	593	588	572	544
Deaths per year (thousands)	286	312	344	382	421	465	515	592	687
Net migration per year (thousands)	-20	-20	-20	-20	-10	0	0	0	0
Population growth rate (percentage)	0.83	0.72	0.58	0.43	0.33	0.25	0.14	- 0.04	- 0.27
Crude birth rate (per 1,000 population)	14.9	14.1	13.2	12.2	11.6	11.4	11.2	10.8	10.5
Crude death rate (per 1,000 population)	6.2	6.5	7.0	7.6	8.2	8.9	9.8	11.2	13.2
Net migration rate (per 1,000 population)	- 0.4	- 0.4	- 0.4	- 0.4	- 0.2	0.0	0.0	0.0	0.0
Total fertility rate (per woman)	1.65	1.69	1.76	1.83	1.89	1.90	1.90	1.90	1.90
Gross reproduction rate (per woman)	0.77	0.79	0.84	0.88	0.91	0.91	0.91	0.91	0.91
Net reproduction rate (per woman)	0.75	0.78	0.82	0.86	0.89	0.90	0.90	0.90	0.90
Infant mortality rate (per 1,000 births)	10	9	9	8	7	7	6	6	6
Mortality under age 5 (per 1,000 births)	13	12	11	10	9	8	7	7	7
Life expectancy at birth (years)									
Males	68.8	70.0	71.0	72.0	73.0	73.8	74.6	75.7	76.6
Females	76.0	77.0	78.0	78.8	79.6	80.4	80.9	81.7	82.6
Both sexes combined	72.4	73.5	74.5	75.4	76.3	77.1	77.8	78.7	79.6

Source: United Nations Population Division, *World Population Prospects: The 1998 Revision.*

TABLE A.9 (*continued*)

REPUBLIC OF KOREA

C. HIGH-VARIANT PROJECTIONS

	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	44 949	46 988	48 978	50 725	52 143	53 380	54 620	55 777	57 430	58 114
Males	22 646	23 701	24 715	25 579	26 253	26 832	27 402	27 940	28 713	29 053
Females	22 303	23 287	24 263	25 147	25 890	26 548	27 218	27 837	28 716	29 061
Age distribution:										
Percentage aged 0-4	7.7	7.5	7.4	7.0	6.5	6.3	6.5	6.7	6.5	6.5
Percentage aged 5-14	15.8	14.2	14.2	14.0	13.6	12.9	12.4	12.4	13.0	12.9
Percentage aged 15-24	18.7	16.4	14.3	13.1	13.2	13.2	13.0	12.4	12.0	12.9
Percentage aged 60 or over	8.9	10.5	11.9	13.3	15.2	18.5	21.4	23.8	27.0	26.8
Percentage aged 65 or over	5.6	6.7	8.0	9.1	10.3	11.9	14.7	17.1	20.9	21.8
Percentage of women aged 15-49	57.7	57.6	55.3	51.6	48.3	45.7	42.9	41.1	39.8	40.7
Median age (years)	29.2	31.4	33.5	35.5	37.3	38.8	39.9	40.0	40.2	40.1

	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population change per year (thousands)	408	398	350	284	247	248	231	165	68
Population growth rate (percentage)	0.89	0.83	0.70	0.55	0.47	0.46	0.42	0.29	0.12
Crude birth rate (per 1,000 population)	15.5	15.2	14.3	13.3	12.9	13.2	13.5	13.4	13.1
Crude death rate (per 1,000 population)	6.2	6.5	6.9	7.4	8.0	8.6	9.4	10.5	11.9
Net migration rate (per 1,000 population)	- 0.4	- 0.4	- 0.4	- 0.4	- 0.2	0.0	0.0	0.0	0.0
Total fertility rate (per woman)	1.72	1.83	1.93	2.03	2.13	2.23	2.28	2.30	2.30
Gross reproduction rate (per woman)	0.80	0.86	0.92	0.98	1.02	1.07	1.10	1.11	1.11
Net reproduction rate (per woman)	0.78	0.84	0.90	0.96	1.01	1.06	1.08	1.09	1.09

D. LOW-VARIANT PROJECTIONS

	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	44 949	46 700	48 039	49 000	49 532	49 750	49 704	49 287	47 277	43 855
Males	22 646	23 548	24 216	24 668	24 882	24 932	24 834	24 555	23 426	21 636
Females	22 303	23 153	23 823	24 332	24 650	24 818	24 870	24 733	23 852	22 219
Age distribution:										
Percentage aged 0-4	7.7	6.9	6.2	5.6	5.1	4.7	4.5	4.3	3.9	3.8
Percentage aged 5-14	15.8	14.3	13.8	12.6	11.5	10.5	9.7	9.3	8.7	8.2
Percentage aged 15-24	18.7	16.5	14.6	13.5	13.3	12.3	11.4	10.6	9.7	9.4
Percentage aged 60 or over	8.9	10.6	12.1	13.8	16.0	19.8	23.5	26.9	32.8	35.5
Percentage aged 65 or over	5.6	6.8	8.2	9.5	10.9	12.8	16.1	19.4	25.4	28.9
Percentage of women aged 15-49	57.7	57.9	56.3	53.3	50.2	47.1	43.7	41.2	38.1	36.0
Median age (years)	29.2	31.5	34.0	36.5	39.0	41.2	43.2	45.1	47.7	49.9

	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population change per year (thousands)	350	268	192	106	44	-9	-83	-201	-342
Population growth rate (percentage)	0.77	0.57	0.40	0.22	0.09	- 0.02	- 0.17	- 0.42	- 0.75
Crude birth rate (per 1,000 population)	14.3	12.6	11.4	10.3	9.5	9.1	8.7	8.0	7.5
Crude death rate (per 1,000 population)	6.2	6.6	7.1	7.7	8.4	9.3	10.4	12.2	15.0
Net migration rate (per 1,000 population)	- 0.4	- 0.4	- 0.4	- 0.4	- 0.2	0.0	0.0	0.0	0.0
Total fertility rate (per woman)	1.58	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Gross reproduction rate (per woman)	0.74	0.71	0.71	0.72	0.72	0.72	0.72	0.72	0.72
Net reproduction rate (per woman)	0.72	0.69	0.70	0.71	0.71	0.71	0.71	0.71	0.71

E. CONSTANT-VARIANT PROJECTIONS

	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	44 949	46 936	48 660	49 977	50 835	51 379	51 730	51 802	50 829	48 406

	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population growth rate (percentage)	0.87	0.72	0.53	0.34	0.21	0.14	0.03	- 0.19	- 0.49
Crude birth rate (per 1,000 population)	15.3	14.2	12.7	11.4	10.5	10.4	10.2	9.6	8.9
Crude death rate (per 1,000 population)	6.2	6.5	7.0	7.6	8.2	9.0	9.9	11.5	13.8

Source: United Nations Population Division, *World Population Prospects: The 1998 Revision.*

TABLE A.10. REPUBLIC OF KOREA, REPLACEMENT MIGRATION SCENARIOS

REPUBLIC OF KOREA

Scenario / Period	I Medium variant	II Medium variant with zero migration	III Constant total population	IV Constant age group 15-64	V Constant ratio 15-64/65 years or older
		A. Average annual net migration (thousands)			
1995-2000	-20	0	0	0	4 156
2000-2005	-20	0	0	0	7 278
2005-2010	-20	0	0	0	8 378
2010-2015	-20	0	0	0	10 678
2015-2020	-10	0	0	0	16 470
2020-2025	0	0	0	207	32 950
2025-2030	0	0	0	269	56 296
2030-2035	0	0	0	268	98 662
2035-2040	0	0	53	286	163 817
2040-2045	0	0	109	141	250 241
2045-2050	0	0	140	114	380 860
Grand total 1995-2050	-450	0	1 509	6 426	5 148 928
		B. Total population (thousands)			
1995	44 949	44 949	44 949	44 949	44 949
2000	46 844	46 946	46 946	46 946	68 768
2005	48 548	48 755	48 755	48 755	110 750
2010	49 976	50 291	50 291	50 291	161 469
2015	51 051	51 474	51 474	51 474	227 364
2020	51 893	52 375	52 375	52 375	328 110
2025	52 533	53 020	53 020	54 119	522 908
2030	52 898	53 389	53 389	56 034	856 241
2035	52 979	53 470	53 470	57 776	1 439 406
2040	52 700	53 189	53 470	59 345	2 412 051
2045	52 097	52 580	53 470	59 910	3 915 529
2050	51 275	51 751	53 470	60 125	6 233 275
		C. Age group 15-64 (thousands)			
1995	31 882	31 882	31 882	31 882	31 882
2000	33 623	33 696	33 696	33 696	48 998
2005	34 496	34 644	34 644	34 644	77 984
2010	35 455	35 678	35 678	35 678	113 307
2015	36 106	36 405	36 405	36 405	159 555
2020	36 314	36 649	36 649	36 649	230 307
2025	35 557	35 886	35 886	36 649	365 720
2030	34 506	34 827	34 827	36 649	595 824
2035	33 379	33 689	33 689	36 649	997 406
2040	32 083	32 383	32 578	36 649	1 667 666
2045	31 205	31 495	32 109	36 649	2 707 304
2050	30 401	30 685	31 867	36 649	4 319 740
		D. Potential support ratio 15-64/65 or older			
1995	12.62	12.62	12.62	12.62	12.62
2000	10.67	10.67	10.67	10.67	12.62
2005	8.77	8.77	8.77	8.77	12.62
2010	7.64	7.64	7.64	7.64	12.62
2015	6.70	6.70	6.70	6.70	12.62
2020	5.70	5.70	5.70	5.70	12.62
2025	4.43	4.43	4.43	4.51	12.62
2030	3.61	3.61	3.61	3.76	12.62
2035	3.07	3.07	3.07	3.29	12.62
2040	2.67	2.67	2.68	2.95	12.62
2045	2.50	2.50	2.54	2.83	12.62
2050	2.40	2.40	2.48	2.76	12.62

TABLE A.10. (*continued*)

REPUBLIC OF KOREA

Scenario	I	II	III	IV	V
Period	Medium variant	Medium variant with zero migration	Constant total population	Constant age group 15-64	Constant ratio 15-64/65 years or older
			E. Age group 65 or older (thousands)		
1995	2 527	2 527	2 527	2 527	2 527
2000	3 152	3 159	3 159	3 159	3 884
2005	3 934	3 951	3 951	3 951	6 182
2010	4 639	4 668	4 668	4 668	8 982
2015	5 387	5 432	5 432	5 432	12 648
2020	6 366	6 426	6 426	6 426	18 256
2025	8 020	8 094	8 094	8 131	28 990
2030	9 565	9 653	9 653	9 753	47 231
2035	10 867	10 968	10 968	11 146	79 064
2040	12 024	12 134	12 144	12 409	132 195
2045	12 488	12 603	12 637	12 971	214 606
2050	12 665	12 781	12 851	13 270	342 421
			F. Percentage in age group 65 or older		
1995	5.6	5.6	5.6	5.6	5.6
2000	6.7	6.7	6.7	6.7	5.6
2005	8.1	8.1	8.1	8.1	5.6
2010	9.3	9.3	9.3	9.3	5.6
2015	10.6	10.6	10.6	10.6	5.6
2020	12.3	12.3	12.3	12.3	5.6
2025	15.3	15.3	15.3	15.0	5.5
2030	18.1	18.1	18.1	17.4	5.5
2035	20.5	20.5	20.5	19.3	5.5
2040	22.8	22.8	22.7	20.9	5.5
2045	24.0	24.0	23.6	21.7	5.5
2050	24.7	24.7	24.0	22.1	5.5
			G. Age group 0-14 (thousands)		
1995	10 540	10 540	10 540	10 540	10 540
2000	10 068	10 091	10 091	10 091	15 886
2005	10 118	10 160	10 160	10 160	26 585
2010	9 882	9 945	9 945	9 945	39 180
2015	9 558	9 637	9 637	9 637	55 160
2020	9 213	9 299	9 299	9 299	79 547
2025	8 956	9 040	9 040	9 338	128 197
2030	8 827	8 909	8 909	9 632	213 186
2035	8 733	8 814	8 814	9 981	362 937
2040	8 592	8 672	8 748	10 286	612 190
2045	8 404	8 482	8 725	10 290	993 619
2050	8 209	8 285	8 752	10 205	1 571 113
			H. Potential support ratio in 2050, by age at entry into non-working-age population		
Age					
65	2.40	2.40	2.48	2.76	12.62
70	3.55	3.55	3.66	4.06	20.96
75	5.61	5.61	5.78	6.39	39.32
80	10.44	10.45	10.75	11.83	88.83

NOTE: The five scenarios are briefly as follows:

I - Corresponds to the medium variant of the official United Nations population projections (*World Population Prospects, 1998 Revision*);
II - This scenario amends the medium variant by assuming no migration after 1995;
III - This scenario keeps the total population figure constant at the highest level that it would reach in absence of migration after 1995.
IV - This scenario keeps the number of persons aged 15-64 constant at the highest level that it would reach in absence of migration after 1995.
V - This scenario keeps the ratio of persons aged 15-64 to persons aged 65 and above at the highest level that it would reach in absence of migration after 1995.

TABLE A.11. RUSSIAN FEDERATION, *1998 REVISION*

RUSSIAN FEDERATION

A. ESTIMATES

Indicator	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995
Population (thousands)										
Total	102 192	111 402	119 906	126 749	130 392	134 233	138 660	143 329	148 292	148 097
Males	43 859	48 826	53 472	57 261	59 368	61 362	63 895	66 497	69 444	69 353
Females	58 333	62 576	66 434	69 488	71 024	72 870	74 765	76 832	78 848	78 744
Sex ratio (per 100 females)	75.2	78.0	80.5	82.4	83.6	84.2	85.5	86.5	88.1	88.1
Age distribution:										
Percentage aged 0-4	9.8	11.3	11.2	9.6	7.2	7.5	7.7	8.1	7.8	5.2
Percentage aged 5-14	19.1	15.6	18.7	20.3	19.4	15.8	13.9	14.5	15.2	15.9
Percentage aged 15-24	21.1	19.8	16.2	13.5	16.9	18.7	17.7	14.7	13.3	14.3
Percentage aged 60 or over	9.2	9.1	9.3	10.4	11.9	13.6	13.5	13.9	16.0	16.7
Percentage aged 65 or over	6.2	6.3	6.3	6.6	7.7	8.9	10.2	9.7	10.0	11.9
Percentage of women aged 15-49	55.3	55.0	50.2	47.4	49.5	50.9	49.1	47.8	45.8	48.7
Median age (years)	25.0	26.5	27.4	28.5	30.6	30.8	31.3	32.1	33.3	35.1
Population density (per sq km)	6	7	7	7	8	8	8	8	9	9

Indicator	1950-1955	1955-1960	1960-1965	1965-1970	1970-1975	1975-1980	1980-1985	1985-1990	1990-1995
Population change per year (thousands)	1 842	1 701	1 369	729	768	885	934	993	- 39
Births per year (thousands)	2 592	2 772	2 489	1 920	2 011	2 156	2 355	2 333	1 566
Deaths per year (thousands)	908	993	1 009	1 080	1 204	1 405	1 565	1 560	1 979
Population growth rate (percentage)	1.73	1.47	1.11	0.57	0.58	0.65	0.66	0.68	- 0.03
Crude birth rate (per 1,000 population)	24.3	24.0	20.2	14.9	15.2	15.8	16.7	16.0	10.6
Crude death rate (per 1,000 population)	8.5	8.6	8.2	8.4	9.1	10.3	11.1	10.7	13.4
Total fertility rate (per woman)	2.51	2.62	2.48	2.02	1.98	1.92	1.99	2.10	1.50
Gross reproduction rate (per woman)	1.23	1.28	1.21	0.99	0.97	0.94	0.97	1.02	0.73
Net reproduction rate (per woman)	1.16	1.22	1.16	0.95	0.93	0.90	0.94	0.99	0.71
Infant mortality rate (per 1,000 births)	98	57	39	31	28	30	26	24	18
Life expectancy at birth (years)									
Males	62.5	63.0	64.0	63.9	63.1	61.9	62.1	64.3	60.6
Females	70.5	71.0	72.6	73.5	73.5	73.1	73.4	74.3	72.8
Both sexes combined	67.3	67.7	69.0	69.0	68.2	67.4	67.6	69.2	66.5

B. MEDIUM-VARIANT PROJECTIONS

Indicator	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	148 097	146 934	145 549	144 418	142 945	140 639	137 933	135 207	128 875	121 256
Males	69 353	68 674	67 879	67 323	66 688	65 662	64 460	63 242	60 412	57 126
Females	78 744	78 260	77 670	77 095	76 258	74 977	73 473	71 965	68 463	64 129
Sex ratio (per 100 females)	88.1	87.8	87.4	87.3	87.5	87.6	87.7	87.9	88.2	89.1
Age distribution:										
Percentage aged 0-4	5.2	4.8	5.2	5.5	5.3	4.8	4.7	4.8	4.7	4.5
Percentage aged 5-14	15.9	13.4	10.4	10.2	10.9	11.1	10.5	9.9	10.0	9.8
Percentage aged 15-24	14.3	15.6	16.3	13.7	10.7	10.6	11.4	11.6	10.4	10.6
Percentage aged 60 or over	16.7	18.5	17.4	18.2	20.3	22.9	25.0	25.8	28.6	33.4
Percentage aged 65 or over	11.9	12.5	14.0	12.9	13.7	15.6	18.1	19.9	21.5	25.0
Percentage in school ages 6-11	9.7	7.4	5.9	6.2	6.6	6.6	6.1	5.8	6.0	5.8
Percentage in school ages 12-14	4.7	5.0	3.5	3.0	3.2	3.4	3.4	3.1	3.0	3.1
Percentage in school ages 15-17	4.5	4.9	4.7	3.1	3.0	3.3	3.5	3.3	3.0	3.1
Percentage in school ages 18-23	8.5	9.2	10.0	9.0	6.3	6.2	6.8	7.1	6.2	6.4
Percentage of women aged 15-49	48.7	50.6	50.8	47.9	45.4	44.7	43.9	42.3	37.0	37.7
Median age (years)	35.1	36.7	37.7	38.4	39.4	40.7	42.4	44.1	46.3	46.1
Population density (per sq km)	9	9	9	8	8	8	8	8	8	7

Indicator	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population change per year (thousands)	-233	-277	-226	-295	-461	-541	-545	-633	-762
Births per year (thousands)	1 421	1 522	1 610	1 533	1 381	1 313	1 305	1 251	1 135
Deaths per year (thousands)	2 048	2 098	2 041	1 982	1 947	1 909	1 905	1 939	1 951
Net migration per year (thousands)	394	299	204	154	104	55	55	55	55
Population growth rate (percentage)	- 0.16	- 0.19	- 0.16	- 0.21	- 0.33	- 0.39	- 0.40	- 0.48	- 0.61
Crude birth rate (per 1,000 population)	9.6	10.4	11.1	10.7	9.7	9.4	9.6	9.5	9.1
Crude death rate (per 1,000 population)	13.9	14.3	14.1	13.8	13.7	13.7	13.9	14.7	15.6
Net migration rate (per 1,000 population)	2.7	2.0	1.4	1.1	0.7	0.4	0.4	0.4	0.4
Total fertility rate (per woman)	1.35	1.38	1.45	1.52	1.59	1.66	1.70	1.70	1.70
Gross reproduction rate (per woman)	0.66	0.67	0.71	0.74	0.78	0.81	0.83	0.83	0.83
Net reproduction rate (per woman)	0.64	0.65	0.69	0.72	0.76	0.79	0.81	0.82	0.82
Infant mortality rate (per 1,000 births)	18	18	16	15	14	13	12	10	9
Mortality under age 5 (per 1,000 births)	22	21	20	18	16	15	14	12	10
Life expectancy at birth (years)									
Males	60.6	61.3	63.3	65.3	66.8	68.3	69.5	70.9	72.8
Females	72.8	73.2	74.2	75.2	76.0	76.8	77.6	78.8	80.3
Both sexes combined	66.6	67.1	68.7	70.3	71.5	72.7	73.7	75.0	76.7

Source: United Nations Population Division, *World Population Prospects: The 1998 Revision.*

TABLE A.11 (*continued*)

RUSSIAN FEDERATION

C. HIGH-VARIANT PROJECTIONS

	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	148 097	147 856	148 470	149 512	150 232	150 306	150 380	150 806	151 568	151 823
Males	69 353	69 145	69 372	69 927	70 412	70 603	70 820	71 211	72 000	72 723
Females	78 744	78 711	79 098	79 585	79 820	79 704	79 559	79 595	79 568	79 099
Age distribution:										
Percentage aged 0-4	5.2	5.4	6.4	6.8	6.5	6.1	6.2	6.4	6.4	6.4
Percentage aged 5-14	15.9	13.3	10.8	11.8	13.2	13.3	12.7	12.3	12.9	12.8
Percentage aged 15-24	14.3	15.5	16.0	13.3	10.8	11.8	13.2	13.3	12.2	12.9
Percentage aged 60 or over	16.7	18.4	17.1	17.6	19.3	21.4	22.9	23.1	24.3	26.7
Percentage aged 65 or over	11.9	12.4	13.7	12.5	13.0	14.6	16.6	17.9	18.3	20.0
Percentage of women aged 15-49	48.7	50.3	49.9	46.4	44.0	43.9	43.6	42.7	39.4	41.7
Median age (years)	35.1	36.5	37.0	37.1	37.7	38.6	39.8	40.8	39.3	39.5

	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population change per year (thousands)	- 48	123	208	144	15	15	85	76	25
Population growth rate (percentage)	- 0.03	0.08	0.14	0.10	0.01	0.01	0.06	0.05	0.02
Crude birth rate (per 1,000 population)	10.9	13.0	13.8	13.2	12.4	12.5	13.0	13.1	12.8
Crude death rate (per 1,000 population)	13.9	14.2	13.8	13.3	13.0	12.8	12.7	12.9	13.0
Net migration rate (per 1,000 population)	2.7	2.0	1.4	1.0	0.7	0.4	0.4	0.4	0.4
Total fertility rate (per woman)	1.52	1.75	1.85	1.95	2.05	2.10	2.10	2.10	2.10
Gross reproduction rate (per woman)	0.74	0.85	0.90	0.95	1.00	1.02	1.02	1.02	1.02
Net reproduction rate (per woman)	0.72	0.83	0.88	0.93	0.98	1.00	1.00	1.01	1.01

D. LOW-VARIANT PROJECTIONS

	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	148 097	146 675	144 561	142 315	139 469	135 613	131 063	126 190	115 164	102 544
Males	69 353	68 541	67 374	66 248	64 910	63 092	60 948	58 632	53 405	47 569
Females	78 744	78 133	77 187	76 067	74 559	72 521	70 115	67 558	61 759	54 975
Age distribution:										
Percentage aged 0-4	5.2	4.6	4.7	4.8	4.4	3.9	3.5	3.4	3.2	2.8
Percentage aged 5-14	15.9	13.4	10.3	9.7	9.9	9.7	8.8	7.9	7.3	6.8
Percentage aged 15-24	14.3	15.6	16.4	13.9	10.8	10.2	10.5	10.4	8.7	8.2
Percentage aged 60 or over	16.7	18.5	17.5	18.5	20.8	23.8	26.3	27.6	32.0	39.5
Percentage aged 65 or over	11.9	12.5	14.1	13.1	14.0	16.2	19.1	21.3	24.0	29.6
Percentage of women aged 15-49	48.7	50.6	51.1	48.6	46.3	45.6	44.5	42.6	35.6	34.1
Median age (years)	35.1	36.8	38.0	38.9	40.2	41.9	43.9	46.1	50.5	52.4

	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population change per year (thousands)	-284	-423	-449	-569	-771	-910	-975	- 1 103	- 1 262
Population growth rate (percentage)	- 0.19	- 0.29	- 0.31	- 0.40	- 0.56	- 0.68	- 0.76	- 0.91	- 1.16
Crude birth rate (per 1,000 population)	9.3	9.4	9.6	8.9	7.7	7.0	6.7	6.4	5.7
Crude death rate (per 1,000 population)	13.9	14.4	14.2	14.0	14.1	14.3	14.7	16.0	17.8
Net migration rate (per 1,000 population)	2.7	2.1	1.4	1.1	0.8	0.4	0.4	0.5	0.5
Total fertility rate (per woman)	1.30	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Gross reproduction rate (per woman)	0.63	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61
Net reproduction rate (per woman)	0.61	0.59	0.59	0.59	0.59	0.59	0.60	0.60	0.60

E. CONSTANT-VARIANT PROJECTIONS

	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	148 097	147 737	146 999	146 136	144 608	142 120	139 129	135 950	128 334	119 039

	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population growth rate (percentage)	- 0.05	- 0.10	- 0.12	- 0.21	- 0.35	- 0.43	- 0.46	- 0.58	- 0.75
Crude birth rate (per 1,000 population)	10.7	11.2	11.4	10.5	9.4	8.9	8.8	8.5	7.8
Crude death rate (per 1,000 population)	13.9	14.3	13.9	13.6	13.6	13.6	13.9	14.7	15.8

Source: United Nations Population Division, *World Population Prospects: The 1998 Revision.*

TABLE A.12. RUSSIAN FEDERATION, REPLACEMENT MIGRATION SCENARIOS

RUSSIAN FEDERATION

Scenario	I	II	III	IV	V
Period	Medium variant	Medium variant with zero migration	Constant total population	Constant age group 15-64	Constant ratio 15-64/65 years or older
			A. Average annual net migration (thousands)		
1995-2000	394	0	611	0	746
2000-2005	299	0	539	95	3 801
2005-2010	204	0	387	79	-3 888
2010-2015	154	0	392	899	2 372
2015-2020	104	0	470	1 094	6 376
2020-2025	55	0	464	994	7 995
2025-2030	55	0	447	730	6 089
2030-2035	55	0	486	443	2 557
2035-2040	55	0	558	695	4 480
2040-2045	55	0	606	873	6 347
2045-2050	55	0	635	1 189	11 867
Grand total 1995-2050	7 417	0	27 971	35 454	243 709
			B. Total population (thousands)		
1995	148 097	148 097	148 097	148 097	148 097
2000	146 934	144 960	148 097	144 960	148 791
2005	145 549	142 048	148 097	142 536	165 588
2010	144 418	139 796	148 097	140 718	144 436
2015	142 945	137 434	148 097	143 055	154 123
2020	140 639	134 582	148 097	146 223	185 030
2025	137 933	131 649	148 097	149 146	226 586
2030	135 207	128 727	148 097	150 974	260 764
2035	132 243	125 578	148 097	151 191	277 531
2040	128 875	122 027	148 097	152 318	303 736
2045	125 170	118 186	148 097	154 192	340 184
2050	121 256	114 178	148 097	157 658	406 551
			C. Age group 15-64 (thousands)		
1995	99 200	99 200	99 200	99 200	99 200
2000	101 862	100 467	102 703	100 467	103 198
2005	102 592	100 119	104 480	100 467	116 950
2010	103 028	99 804	105 879	100 467	103 557
2015	100 229	96 455	104 349	100 467	109 032
2020	96 217	92 136	102 179	100 467	128 725
2025	92 021	87 876	100 056	100 467	156 042
2030	88 473	84 327	98 521	100 467	178 976
2035	85 819	81 700	97 915	100 467	191 288
2040	82 322	78 216	96 629	100 467	209 991
2045	78 365	74 244	95 067	100 467	235 545
2050	73 569	69 413	92 796	100 467	279 890
			D. Potential support ratio 15-64/65 or older		
1995	5.62	5.62	5.62	5.62	5.62
2000	5.54	5.51	5.60	5.51	5.62
2005	5.04	5.00	5.16	5.02	5.62
2010	5.52	5.51	5.74	5.54	5.62
2015	5.13	5.15	5.45	5.31	5.62
2020	4.38	4.39	4.73	4.69	5.62
2025	3.68	3.69	4.05	4.09	5.62
2030	3.28	3.29	3.67	3.78	5.62
2035	3.17	3.20	3.58	3.74	5.62
2040	2.98	3.02	3.39	3.63	5.62
2045	2.74	2.78	3.16	3.43	5.62
2050	2.43	2.44	2.85	3.12	5.62

TABLE A.12 (*continued*)

RUSSIAN FEDERATION

Scenario	I	II	III	IV	V
Period	Medium variant	Medium variant with zero migration	Constant total population	Constant age group 15-64	Constant ratio 15-64/65 years or older
			E. Age group 65 or older (thousands)		
1995	17 664	17 664	17 664	17 664	17 664
2000	18 393	18 249	18 353	18 249	18 376
2005	20 341	20 017	20 240	20 033	20 825
2010	18 670	18 104	18 436	18 139	18 440
2015	19 532	18 712	19 163	18 909	19 415
2020	21 985	20 985	21 598	21 423	22 922
2025	24 989	23 835	24 687	24 550	27 786
2030	26 938	25 603	26 830	26 594	31 870
2035	27 112	25 569	27 379	26 855	34 062
2040	27 661	25 919	28 481	27 683	37 393
2045	28 620	26 755	30 101	29 301	41 943
2050	30 315	28 398	32 504	32 168	49 840
			F. Percentage in age group 65 or older		
1995	11.9	11.9	11.9	11.9	11.9
2000	12.5	12.6	12.4	12.6	12.4
2005	14.0	14.1	13.7	14.1	12.6
2010	12.9	13.0	12.4	12.9	12.8
2015	13.7	13.6	12.9	13.2	12.6
2020	15.6	15.6	14.6	14.7	12.4
2025	18.1	18.1	16.7	16.5	12.3
2030	19.9	19.9	18.1	17.6	12.2
2035	20.5	20.4	18.5	17.8	12.3
2040	21.5	21.2	19.2	18.2	12.3
2045	22.9	22.6	20.3	19.0	12.3
2050	25.0	24.9	21.9	20.4	12.3
			G. Age group 0-14 (thousands)		
1995	31 232	31 232	31 232	31 232	31 232
2000	26 679	26 244	27 040	26 244	27 216
2005	22 617	21 911	23 377	22 036	27 813
2010	22 720	21 887	23 782	22 112	22 438
2015	23 185	22 267	24 584	23 679	25 676
2020	22 437	21 461	24 319	24 333	33 384
2025	20 923	19 938	23 353	24 129	42 759
2030	19 796	18 797	22 746	23 913	49 918
2035	19 313	18 309	22 803	23 869	52 181
2040	18 891	17 892	22 986	24 168	56 352
2045	18 185	17 187	22 929	24 423	62 696
2050	17 372	16 367	22 797	25 023	76 821
			H. Potential support ratio in 2050, by age at entry into non-working-age population		
Age					
65	2.43	2.44	2.85	3.12	5.62
70	3.95	4.03	4.67	5.16	9.20
75	6.66	6.91	8.02	8.87	15.80
80	12.05	12.78	15.09	16.48	30.37

NOTE: The five scenarios are briefly as follows:

I - Corresponds to the medium variant of the official United Nations population projections (*World Population Prospects, 1998 Revision*);
II - This scenario amends the medium variant by assuming no migration after 1995;
III - This scenario keeps the total population figure constant at the highest level that it would reach in absence of migration after 1995.
IV - This scenario keeps the number of persons aged 15-64 constant at the highest level that it would reach in absence of migration after 1995.
V - This scenario keeps the ratio of persons aged 15-64 to persons aged 65 and above at the highest level that it would reach in absence of migration after 1995.

TABLE A.13. UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND, *1998 REVISION*

UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND

A. ESTIMATES

Indicator	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995
Population (thousands)										
Total	50 616	51 199	52 372	54 350	55 632	56 226	56 330	56 618	57 561	58 308
Males	24 575	24 726	25 271	26 368	27 064	27 403	27 436	27 574	28 118	28 574
Females	26 041	26 473	27 101	27 982	28 568	28 823	28 894	29 044	29 443	29 734
Sex ratio (per 100 females)	94.4	93.4	93.2	94.2	94.7	95.1	95.0	94.9	95.5	96.1
Age distribution:										
Percentage aged 0-4	8.6	7.5	7.9	8.7	8.1	7.1	6.0	6.4	6.7	6.4
Percentage aged 5-14	13.7	15.3	15.3	14.5	16.1	16.3	14.9	12.9	12.5	12.9
Percentage aged 15-24	13.6	12.9	13.3	14.6	14.7	14.3	15.5	16.4	14.3	12.7
Percentage aged 60 or over	15.5	16.2	16.9	17.6	18.7	19.6	20.1	20.7	20.9	20.7
Percentage aged 65 or over	10.7	11.3	11.7	12.0	12.9	14.0	15.1	15.1	15.7	15.9
Percentage of women aged 15-49	49.2	47.1	45.3	44.6	43.6	43.6	45.3	47.5	48.1	47.6
Median age (years)	34.6	35.0	35.4	34.8	33.7	33.9	34.6	35.3	36.1	36.9
Population density (per sq km)	207	210	215	223	228	230	231	232	236	239

Indicator	1950-1955	1955-1960	1960-1965	1965-1970	1970-1975	1975-1980	1980-1985	1985-1990	1990-1995
Population change per year (thousands)	117	235	396	256	119	21	58	189	149
Births per year (thousands)	808	849	971	966	811	696	732	775	753
Deaths per year (thousands)	595	604	629	641	654	668	658	655	656
Population growth rate (percentage)	0.23	0.45	0.74	0.47	0.21	0.04	0.10	0.33	0.26
Crude birth rate (per 1,000 population)	15.9	16.4	18.2	17.6	14.5	12.4	13.0	13.6	13.0
Crude death rate (per 1,000 population)	11.7	11.7	11.8	11.7	11.7	11.9	11.7	11.5	11.3
Total fertility rate (per woman)	2.18	2.49	2.81	2.52	2.04	1.72	1.80	1.81	1.78
Gross reproduction rate (per woman)	1.06	1.22	1.37	1.23	1.00	0.84	0.88	0.88	0.87
Net reproduction rate (per woman)	1.02	1.18	1.34	1.20	0.97	0.82	0.87	0.87	0.86
Infant mortality rate (per 1,000 births)	29	24	22	19	17	14	11	9	7
Life expectancy at birth (years)									
Males	66.7	67.7	67.9	68.3	69.0	69.7	71.0	72.3	73.7
Females	71.8	73.3	73.8	74.6	75.2	76.0	77.2	77.9	79.0
Both sexes combined	69.2	70.4	70.8	71.4	72.0	72.8	74.0	75.0	76.2

B. MEDIUM-VARIANT PROJECTIONS

Indicator	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	58 308	58 830	59 143	59 331	59 566	59 845	59 961	59 619	58 289	56 667
Males	28 574	28 886	29 084	29 208	29 342	29 484	29 531	29 348	28 668	27 898
Females	29 734	29 944	30 059	30 124	30 224	30 361	30 430	30 271	29 621	28 768
Sex ratio (per 100 females)	96.1	96.5	96.8	97.0	97.1	97.1	97.0	96.9	96.8	97.0
Age distribution:										
Percentage aged 0-4	6.4	5.9	5.5	5.4	5.5	5.7	5.6	5.4	5.2	5.4
Percentage aged 5-14	12.9	12.9	12.2	11.4	10.9	10.9	11.2	11.3	10.8	10.8
Percentage aged 15-24	12.7	12.3	12.7	12.9	12.2	11.3	10.8	10.9	11.6	11.1
Percentage aged 60 or over	20.7	21.0	21.8	23.5	24.8	26.3	28.3	30.0	30.7	31.3
Percentage aged 65 or over	15.9	16.0	16.4	17.1	18.7	19.8	21.2	23.1	25.0	24.9
Percentage in school ages 6-11	7.8	7.8	7.2	6.7	6.5	6.6	6.8	6.8	6.4	6.5
Percentage in school ages 12-14	3.7	3.9	3.9	3.6	3.3	3.2	3.3	3.4	3.3	3.2
Percentage in school ages 15-17	3.6	3.8	3.9	3.8	3.5	3.3	3.2	3.4	3.4	3.2
Percentage in school ages 18-23	7.6	7.3	7.6	7.8	7.5	6.9	6.5	6.5	7.0	6.7
Percentage of women aged 15-49	47.6	46.4	46.0	45.1	43.1	40.9	39.9	39.7	39.2	38.6
Median age (years)	36.9	38.2	39.7	41.2	42.1	42.6	43.1	43.6	44.8	44.5
Population density (per sq km)	239	241	242	243	244	245	246	244	239	232

Indicator	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population change per year (thousands)	104	63	38	47	56	23	-68	-133	-162
Births per year (thousands)	697	654	641	632	685	670	643	617	614
Deaths per year (thousands)	632	631	644	656	669	687	711	750	776
Net migration per year (thousands)	40	40	40	40	40	40	0	0	0
Population growth rate (percentage)	0.18	0.11	0.06	0.08	0.09	0.04	- 0.11	- 0.23	- 0.28
Crude birth rate (per 1,000 population)	11.9	11.1	10.8	11.1	11.5	11.2	10.8	10.5	10.7
Crude death rate (per 1,000 population)	10.8	10.7	10.9	11.0	11.2	11.5	11.9	12.7	13.5
Net migration rate (per 1,000 population)	0.7	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0
Total fertility rate (per woman)	1.72	1.72	1.76	1.83	1.90	1.90	1.90	1.90	1.90
Gross reproduction rate (per woman)	0.84	0.84	0.86	0.89	0.92	0.93	0.93	0.93	0.93
Net reproduction rate (per woman)	0.83	0.83	0.85	0.88	0.92	0.92	0.92	0.92	0.92
Infant mortality rate (per 1,000 births)	7	7	6	6	6	6	5	5	5
Mortality under age 5 (per 1,000 births)	8	8	7	7	7	6	6	6	5
Life expectancy at birth (years)									
Males	74.5	75.3	75.8	76.3	76.8	77.3	77.8	78.4	79.2
Females	79.8	80.6	81.1	81.6	82.1	82.6	83.0	83.6	84.4
Both sexes combined	77.2	78.0	78.5	78.9	79.4	79.9	80.4	81.0	81.8

Source: United Nations Population Division, *World Population Prospects: The 1998 Revision.*

TABLE A.13 (*continued*)

UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND

C. HIGH-VARIANT PROJECTIONS

	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	58 308	59 011	59 758	60 481	61 309	62 274	63 243	63 879	64 905	66 131
Males	28 574	28 979	29 399	29 797	30 235	30 729	31 212	31 529	32 056	32 743
Females	29 734	30 032	30 359	30 685	31 074	31 546	32 031	32 350	32 850	33 387
Age distribution:										
Percentage aged 0-4	6.4	6.2	6.2	6.2	6.3	6.6	6.6	6.5	6.6	6.9
Percentage aged 5-14	12.9	12.9	12.4	12.2	12.1	12.3	12.7	13.0	12.9	13.2
Percentage aged 15-24	12.7	12.2	12.6	12.6	12.2	11.9	11.8	12.0	12.8	12.7
Percentage aged 60 or over	20.7	20.9	21.6	23.1	24.1	25.2	26.8	28.0	27.6	26.8
Percentage aged 65 or over	15.9	16.0	16.2	16.8	18.2	19.0	20.1	21.5	22.4	21.3
Percentage of women aged 15-49	47.6	46.2	45.5	44.3	42.2	40.3	39.7	39.7	40.2	40.8
Median age (years)	36.9	38.1	39.4	40.5	41.0	40.9	40.8	40.8	40.2	39.1

	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population change per year (thousands)	141	149	145	166	193	194	127	103	123
Population growth rate (percentage)	0.24	0.25	0.24	0.27	0.31	0.31	0.20	0.16	0.19
Crude birth rate (per 1,000 population)	12.5	12.5	12.5	12.8	13.3	13.4	13.2	13.3	13.8
Crude death rate (per 1,000 population)	10.8	10.6	10.7	10.8	10.9	11.0	11.2	11.7	11.9
Net migration rate (per 1,000 population)	0.7	0.7	0.7	0.7	0.6	0.6	0.0	0.0	0.0
Total fertility rate (per woman)	1.81	1.95	2.05	2.15	2.25	2.30	2.30	2.30	2.30
Gross reproduction rate (per woman)	0.88	0.95	1.00	1.05	1.10	1.12	1.12	1.12	1.12
Net reproduction rate (per woman)	0.87	0.94	0.99	1.04	1.09	1.11	1.11	1.11	1.11

D. LOW-VARIANT PROJECTIONS

	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	58 308	58 649	58 547	58 273	57 917	57 455	56 775	55 575	52 292	48 403
Males	28 574	28 794	28 779	28 666	28 497	28 260	27 900	27 277	25 597	23 668
Females	29 734	29 856	29 769	29 607	29 420	29 195	28 876	28 298	26 694	24 735
Age distribution:										
Percentage aged 0-4	6.4	5.6	4.8	4.7	4.7	4.6	4.5	4.2	3.9	3.9
Percentage aged 5-14	12.9	13.0	12.0	10.5	9.7	9.5	9.5	9.4	8.6	8.2
Percentage aged 15-24	12.7	12.3	12.9	13.1	12.2	10.8	9.9	9.8	10.0	9.2
Percentage aged 60 or over	20.7	21.0	22.0	23.9	25.5	27.4	29.9	32.1	34.2	36.6
Percentage aged 65 or over	15.9	16.1	16.5	17.4	19.2	20.6	22.4	24.8	27.8	29.1
Percentage of women aged 15-49	47.6	46.5	46.4	45.9	43.9	41.5	40.3	39.6	37.7	35.4
Median age (years)	36.9	38.3	40.1	41.8	43.2	44.3	45.2	46.3	48.8	50.7

	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population change per year (thousands)	68	-20	-55	-71	-92	-136	-240	-328	-389
Population growth rate (percentage)	0.12	- 0.04	- 0.09	- 0.12	- 0.16	- 0.24	- 0.43	- 0.61	- 0.77
Crude birth rate (per 1,000 population)	11.3	9.7	9.4	9.4	9.3	8.9	8.4	7.8	7.6
Crude death rate (per 1,000 population)	10.8	10.8	11.0	11.3	11.6	12.0	12.6	13.9	15.3
Net migration rate (per 1,000 population)	0.7	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0
Total fertility rate (per woman)	1.63	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Gross reproduction rate (per woman)	0.80	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Net reproduction rate (per woman)	0.79	0.72	0.72	0.72	0.72	0.72	0.73	0.73	0.73

E. CONSTANT-VARIANT PROJECTIONS

	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	58 308	58 951	59 377	59 610	59 768	59 860	59 810	59 326	57 634	55 431

	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population growth rate (percentage)	0.22	0.14	0.08	0.05	0.03	- 0.02	- 0.16	- 0.29	- 0.39
Crude birth rate (per 1,000 population)	12.3	11.4	10.9	10.8	10.8	10.6	10.3	9.9	9.8
Crude death rate (per 1,000 population)	10.8	10.7	10.8	11.0	11.2	11.5	11.9	12.8	13.7

Source: United Nations Population Division, *World Population Prospects: The 1998 Revision.*

TABLE A.14. UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND, REPLACEMENT MIGRATION SCENARIOS

UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND

Scenario	I	II	III	IV	V
Period	Medium variant	Medium variant with zero migration	Constant total population	Constant age group 15-64	Constant ratio 15-64/65 years or older
A. Average annual net migration (thousands)					
1995-2000	40	0	0	0	11
2000-2005	40	0	0	0	62
2005-2010	40	0	0	0	563
2010-2015	40	0	0	188	1 529
2015-2020	40	0	0	177	1 163
2020-2025	40	0	12	241	1 421
2025-2030	0	0	59	280	1 765
2030-2035	0	0	100	178	1 365
2035-2040	0	0	119	47	759
2040-2045	0	0	121	29	1 079
2045-2050	0	0	116	110	2 239
Grand total 1995-2050	1 200	0	2 634	6 247	59 775
B. Total population (thousands)					
1995	58 308	58 308	58 308	58 308	58 308
2000	58 830	58 600	58 600	58 600	58 655
2005	59 143	58 694	58 694	58 694	59 078
2010	59 331	58 685	58 685	58 685	62 066
2015	59 566	58 734	58 734	59 724	70 503
2020	59 845	58 833	58 833	60 860	77 858
2025	59 961	58 768	58 833	62 248	86 856
2030	59 619	58 449	58 833	63 690	97 931
2035	59 029	57 883	58 833	64 456	107 299
2040	58 289	57 168	58 833	64 417	113 699
2045	57 488	56 393	58 833	64 197	121 756
2050	56 667	55 594	58 833	64 354	136 138
C. Age group 15-64 (thousands)					
1995	37 811	37 811	37 811	37 811	37 811
2000	38 328	38 207	38 207	38 207	38 246
2005	38 981	38 739	38 739	38 739	39 009
2010	39 237	38 873	38 873	38 873	41 244
2015	38 661	38 180	38 180	38 873	46 397
2020	38 062	37 468	37 468	38 873	50 665
2025	37 166	36 465	36 510	38 873	55 979
2030	35 914	35 230	35 497	38 873	62 859
2035	34 938	34 266	34 924	38 873	69 084
2040	34 418	33 750	34 902	38 873	73 616
2045	34 009	33 343	35 037	38 873	79 089
2050	33 406	32 745	35 009	38 873	88 239
D. Potential support ratio 15-64/65 or older					
1995	4.09	4.09	4.09	4.09	4.09
2000	4.06	4.08	4.08	4.08	4.09
2005	4.03	4.06	4.06	4.06	4.09
2010	3.86	3.90	3.90	3.90	4.09
2015	3.47	3.50	3.50	3.55	4.09
2020	3.21	3.23	3.23	3.33	4.09
2025	2.92	2.93	2.94	3.09	4.09
2030	2.61	2.62	2.63	2.84	4.09
2035	2.41	2.41	2.45	2.68	4.09
2040	2.37	2.36	2.43	2.64	4.09
2045	2.38	2.37	2.47	2.66	4.09
2050	2.37	2.36	2.49	2.64	4.09

TABLE A.14 (*continued*)

UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND

Scenario	I	II	III	IV	V
Period	Medium variant	Medium variant with zero migration	Constant total population	Constant age group 15-64	Constant ratio 15-64/65 years or older
		E. Age group 65 or older (thousands)			
1995	9 256	9 256	9 256	9 256	9 256
2000	9 433	9 360	9 360	9 360	9 362
2005	9 675	9 535	9 535	9 535	9 549
2010	10 162	9 976	9 976	9 976	10 096
2015	11 140	10 916	10 916	10 951	11 357
2020	11 859	11 604	11 604	11 684	12 402
2025	12 724	12 431	12 433	12 578	13 703
2030	13 757	13 467	13 481	13 705	15 387
2035	14 478	14 197	14 234	14 530	16 911
2040	14 545	14 280	14 351	14 717	18 020
2045	14 291	14 047	14 161	14 635	19 360
2050	14 107	13 881	14 048	14 722	21 600
		F. Percentage in age group 65 or older			
1995	15.9	15.9	15.9	15.9	15.9
2000	16.0	16.0	16.0	16.0	16.0
2005	16.4	16.2	16.2	16.2	16.2
2010	17.1	17.0	17.0	17.0	16.3
2015	18.7	18.6	18.6	18.3	16.1
2020	19.8	19.7	19.7	19.2	15.9
2025	21.2	21.2	21.1	20.2	15.8
2030	23.1	23.0	22.9	21.5	15.7
2035	24.5	24.5	24.2	22.5	15.8
2040	25.0	25.0	24.4	22.8	15.8
2045	24.9	24.9	24.1	22.8	15.9
2050	24.9	25.0	23.9	22.9	15.9
		G. Age group 0-14 (thousands)			
1995	11 241	11 241	11 241	11 241	11 241
2000	11 069	11 033	11 033	11 033	11 048
2005	10 488	10 420	10 420	10 420	10 521
2010	9 933	9 836	9 836	9 836	10 726
2015	9 765	9 637	9 637	9 900	12 749
2020	9 924	9 761	9 761	10 303	14 791
2025	10 071	9 872	9 890	10 796	17 174
2030	9 949	9 751	9 854	11 111	19 686
2035	9 613	9 421	9 675	11 053	21 304
2040	9 326	9 138	9 580	10 827	22 063
2045	9 188	9 003	9 635	10 689	23 307
2050	9 153	8 968	9 775	10 759	26 299
		H. Potential support ratio in 2050 by age at entry into non-working-age population			
Age					
65	2.37	2.36	2.49	2.64	4.09
70	3.38	3.37	3.55	3.80	6.17
75	4.97	4.95	5.21	5.61	9.57
80	7.99	7.97	8.38	9.02	15.92

NOTE: The five scenarios are briefly as follows:

I - Corresponds to the medium variant of the official United Nations population projections (*World Population Prospects 1998 Revision*);
II - This scenario amends the medium variant by assuming no migration after 1995;
III - This scenario keeps the total population figure constant at the highest level that it would reach in absence of migration after 1995.
IV - This scenario keeps the number of persons aged 15-64 constant at the highest level that it would reach in absence of migration after 1995.
V - This scenario keeps the ratio of persons aged 15-64 to persons aged 65 and above at the highest level that it would reach in absence of migration after 1995.

UNITED STATES OF AMERICA

A. ESTIMATES

Indicator	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995
Population (thousands)										
Total	157 813	171 074	186 158	199 796	210 111	220 165	230 406	241 855	254 076	267 020
Males	78 830	84 911	92 132	98 543	103 108	108 140	113 083	118 814	125 076	131 589
Females	78 983	86 163	94 026	101 252	107 003	112 025	117 323	123 041	128 999	135 431
Sex ratio (per 100 females)	99.8	98.5	98.0	97.3	96.4	96.5	96.4	96.6	97.0	97.2
Age distribution:										
Percentage aged 0-4	10.9	11.3	11.2	10.2	8.5	7.5	7.3	7.6	7.7	7.6
Percentage aged 5-14	16.1	18.2	19.6	20.2	19.9	17.6	15.2	14.2	14.2	14.6
Percentage aged 15-24	14.9	13.0	13.6	15.7	17.4	18.7	18.6	16.5	14.4	13.3
Percentage aged 60 or over	12.5	13.1	13.3	13.4	14.1	14.8	15.6	16.4	16.6	16.4
Percentage aged 65 or over	8.3	8.8	9.2	9.5	9.8	10.5	11.2	11.8	12.4	12.5
Percentage of women aged 15-49	50.1	47.2	45.5	45.3	46.5	48.4	50.2	51.1	51.2	50.7
Median age (years)	30.0	30.2	29.6	28.3	28.2	28.8	30.1	31.4	32.8	34.2
Population density (per sq km)	17	18	20	21	22	24	25	26	27	29

Indicator	1950-1955	1955-1960	1960-1965	1965-1970	1970-1975	1975-1980	1980-1985	1985-1990	1990-1995
Population change per year (thousands)	2 652	3 017	2 728	2 063	2 011	2 048	2 290	2 444	2 589
Births per year (thousands)	3 993	4 333	4 234	3 689	3 382	3 396	3 707	3 960	4 046
Deaths per year (thousands)	1 562	1 679	1 814	1 947	1 984	1 949	2 035	2 169	2 307
Population growth rate (percentage)	1.61	1.69	1.41	1.01	0.94	0.91	0.97	0.99	0.99
Crude birth rate (per 1,000 population)	24.3	24.3	21.9	18.0	15.7	15.1	15.7	16.0	15.5
Crude death rate (per 1,000 population)	9.5	9.4	9.4	9.5	9.2	8.7	8.6	8.7	8.9
Total fertility rate (per woman)	3.45	3.71	3.31	2.55	2.02	1.79	1.82	1.92	2.05
Gross reproduction rate (per woman)	1.68	1.81	1.62	1.24	0.98	0.87	0.89	0.93	1.00
Net reproduction rate (per woman)	1.60	1.74	1.56	1.20	0.96	0.86	0.87	0.92	0.98
Infant mortality rate (per 1,000 births)	28	26	25	22	18	14	11	10	8
Life expectancy at birth (years)									
Males	66.2	66.7	66.7	66.9	67.5	69.4	70.9	71.6	72.6
Females	72.0	73.1	73.4	74.1	75.3	77.2	78.3	78.5	79.3
Both sexes combined	69.0	69.8	70.0	70.4	71.3	73.2	74.5	74.9	75.7

B. MEDIUM-VARIANT PROJECTIONS

Indicator	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	267 020	278 357	288 380	297 989	307 727	317 124	325 573	332 619	342 612	349 318
Males	131 589	137 177	142 093	146 799	151 593	156 159	160 163	163 417	167 964	171 286
Females	135 431	141 180	146 287	151 190	156 134	160 965	165 409	169 202	174 649	178 032
Sex ratio (per 100 females)	97.2	97.2	97.1	97.1	97.1	97.0	96.8	96.6	96.2	96.2
Age distribution:										
Percentage aged 0-4	7.6	6.9	6.4	6.2	6.2	6.2	6.0	5.8	5.7	5.7
Percentage aged 5-14	14.6	14.6	13.9	12.9	12.3	12.2	12.2	12.0	11.5	11.4
Percentage aged 15-24	13.3	13.5	14.0	14.1	13.5	12.5	12.1	12.1	12.1	11.7
Percentage aged 60 or over	16.4	16.4	17.1	18.7	20.8	23.3	25.4	26.4	26.9	27.8
Percentage aged 65 or over	12.5	12.5	12.6	13.2	14.7	16.6	18.8	20.6	21.5	21.7
Percentage in school ages 6-11	8.8	8.8	8.3	7.6	7.3	7.3	7.3	7.2	6.9	6.9
Percentage in school ages 12-14	4.2	4.3	4.4	4.0	3.7	3.6	3.6	3.7	3.5	3.4
Percentage in school ages 15-17	4.0	4.2	4.3	4.2	3.8	3.6	3.6	3.7	3.6	3.5
Percentage in school ages 18-23	7.9	8.0	8.3	8.5	8.3	7.6	7.2	7.2	7.3	7.1
Percentage of women aged 15-49	50.7	49.7	48.5	46.9	45.0	43.9	43.3	43.0	42.0	41.1
Median age (years)	34.2	35.8	37.0	37.8	38.4	39.0	39.7	40.6	41.8	42.1
Population density (per sq km)	29	30	31	32	33	34	35	36	37	37

Indicator	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population change per year (thousands)	2 267	2 004	1 922	1 948	1 879	1 690	1 409	999	671
Births per year (thousands)	3 820	3 679	3 712	3 841	3 913	3 905	3 866	3 867	3 933
Deaths per year (thousands)	2 313	2 434	2 550	2 654	2 794	2 975	3 217	3 627	4 022
Net migration per year (thousands)	760	760	760	760	760	760	760	760	760
Population growth rate (percentage)	0.83	0.71	0.66	0.64	0.60	0.53	0.43	0.30	0.19
Crude birth rate (per 1,000 population)	14.0	13.0	12.7	12.7	12.5	12.2	11.7	11.4	11.4
Crude death rate (per 1,000 population)	8.5	8.6	8.7	8.8	8.9	9.3	9.8	10.7	11.6
Net migration rate (per 1,000 population)	2.8	2.7	2.6	2.5	2.4	2.4	2.3	2.2	2.2
Total fertility rate (per woman)	1.99	1.93	1.90	1.90	1.90	1.90	1.90	1.90	1.90
Gross reproduction rate (per woman)	0.97	0.94	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Net reproduction rate (per woman)	0.96	0.93	0.91	0.92	0.92	0.92	0.92	0.92	0.92
Infant mortality rate (per 1,000 births)	7	7	6	6	6	6	6	5	5
Mortality under age 5 (per 1,000 births)	9	8	7	7	7	6	6	6	6
Life expectancy at birth (years)									
Males	73.4	74.2	75.0	75.8	76.3	76.8	77.3	78.0	78.8
Females	80.1	80.6	81.1	81.6	82.1	82.6	83.0	83.6	84.4
Both sexes combined	76.7	77.4	78.0	78.7	79.2	79.7	80.1	80.8	81.6

Source: United Nations Population Division, *World Population Prospects: The 1998 Revision.*

TABLE A.15 (*continued*)

UNITED STATES OF AMERICA

C. HIGH-VARIANT PROJECTIONS

	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	267 020	279 597	292 298	306 023	320 823	335 625	350 084	364 092	391 372	419 001
Males	131 589	137 785	144 045	150 832	158 192	165 498	172 552	179 341	192 676	206 637
Females	135 431	141 812	148 253	155 191	162 631	170 126	177 532	184 751	198 696	212 365
Age distribution:										
Percentage aged 0-4	7.6	7.0	7.0	7.2	7.4	7.3	7.1	7.1	7.2	7.2
Percentage aged 5-14	14.6	14.6	14.0	13.4	13.6	13.9	14.0	13.8	13.7	14.0
Percentage aged 15-24	13.3	13.5	13.9	13.9	13.3	12.8	12.9	13.3	13.3	13.2
Percentage aged 60 or over	16.4	16.3	16.9	18.3	20.0	22.1	23.7	24.3	23.9	23.6
Percentage aged 65 or over	12.5	12.5	12.4	12.9	14.1	15.8	17.6	19.0	19.1	18.5
Percentage of women aged 15-49	50.7	49.6	48.2	46.2	44.0	43.0	42.8	42.9	42.7	42.9
Median age (years)	34.2	35.7	36.6	37.0	37.0	37.2	37.4	37.7	37.4	37.0

	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population change per year (thousands)	2 516	2 540	2 745	2 960	2 960	2 892	2 802	2 728	2 763
Population growth rate (percentage)	0.92	0.89	0.92	0.95	0.90	0.84	0.79	0.72	0.68
Crude birth rate (per 1,000 population)	14.4	14.3	14.7	15.1	14.8	14.6	14.4	14.6	14.7
Crude death rate (per 1,000 population)	8.5	8.5	8.6	8.5	8.6	8.7	9.1	9.7	10.1
Net migration rate (per 1,000 population)	3.3	3.1	3.0	2.9	2.7	2.6	2.5	2.4	2.2
Total fertility rate (per woman)	2.05	2.13	2.23	2.30	2.30	2.30	2.30	2.30	2.30
Gross reproduction rate (per woman)	1.00	1.04	1.09	1.12	1.12	1.12	1.12	1.12	1.12
Net reproduction rate (per woman)	0.99	1.02	1.07	1.11	1.11	1.11	1.11	1.11	1.11

D. LOW-VARIANT PROJECTIONS

	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	267 020	276 872	284 712	291 417	297 123	301 544	304 412	305 485	301 907	292 779
Males	131 589	136 439	140 260	143 502	146 254	148 294	149 465	149 686	147 339	142 622
Females	135 431	140 433	144 452	147 916	150 870	153 249	154 947	155 799	154 568	150 157
Age distribution:										
Percentage aged 0-4	7.6	6.6	6.0	5.6	5.4	5.1	4.8	4.6	4.3	4.1
Percentage aged 5-14	14.6	14.6	13.8	12.4	11.5	11.0	10.5	10.0	9.3	8.9
Percentage aged 15-24	13.3	13.5	14.0	14.3	13.6	12.3	11.6	11.2	10.5	10.0
Percentage aged 60 or over	16.4	16.5	17.3	19.1	21.5	24.3	26.9	28.5	30.0	32.3
Percentage aged 65 or over	12.5	12.6	12.7	13.5	15.2	17.4	20.0	22.3	24.1	25.4
Percentage of women aged 15-49	50.7	49.7	48.7	47.3	45.6	44.5	43.9	43.3	41.1	38.7
Median age (years)	34.2	35.9	37.3	38.5	39.5	40.5	41.7	43.1	45.7	47.4

	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population change per year (thousands)	1 970	1 568	1 341	1 141	884	574	215	-358	-913
Population growth rate (percentage)	0.73	0.56	0.47	0.39	0.30	0.19	0.07	- 0.12	- 0.31
Crude birth rate (per 1,000 population)	13.5	12.1	11.4	10.8	10.2	9.7	9.2	8.6	8.2
Crude death rate (per 1,000 population)	8.5	8.7	8.8	9.0	9.3	9.7	10.4	11.8	13.3
Net migration rate (per 1,000 population)	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0
Total fertility rate (per woman)	1.93	1.80	1.70	1.60	1.53	1.50	1.50	1.50	1.50
Gross reproduction rate (per woman)	0.94	0.88	0.83	0.78	0.75	0.73	0.73	0.73	0.73
Net reproduction rate (per woman)	0.93	0.87	0.82	0.77	0.74	0.72	0.72	0.72	0.73

E. CONSTANT-VARIANT PROJECTIONS

	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	267 020	278 865	289 991	301 071	312 387	323 524	333 971	343 353	359 014	372 416

	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population growth rate (percentage)	0.87	0.78	0.75	0.74	0.70	0.64	0.55	0.45	0.37
Crude birth rate (per 1,000 population)	14.4	13.7	13.6	13.6	13.4	13.1	12.8	12.6	12.6
Crude death rate (per 1,000 population)	8.5	8.6	8.6	8.7	8.8	9.1	9.5	10.3	11.0

Source: United Nations Population Division, *World Population Prospects: The 1998 Revision.*

TABLE A.16. UNITED STATES OF AMERICA, REPLACEMENT MIGRATION SCENARIOS

UNITED STATES OF AMERICA

Scenario Period	I Medium variant	II Medium variant with zero migration	III Constant total population	IV Constant age group 15-64	V Constant ratio 15-64/65 years or older
A. Average annual net migration (thousands)					
1995-2000	760	0	0	0	37
2000-2005	760	0	0	0	-13
2005-2010	760	0	0	0	3 620
2010-2015	760	0	0	0	10 741
2015-2020	760	0	0	833	14 869
2020-2025	760	0	0	1 322	17 751
2025-2030	760	0	0	1 007	14 715
2030-2035	760	0	49	161	7 369
2035-2040	760	0	301	-203	5 748
2040-2045	760	0	441	-37	13 570
2045-2050	760	0	486	512	30 144
Grand total 1995-2050	41 800	0	6 384	17 967	592 757
B. Total population (thousands)					
1995	267 020	267 020	267 020	267 020	267 020
2000	278 357	274 335	274 335	274 335	274 531
2005	288 379	279 936	279 936	279 936	280 080
2010	297 989	284 797	284 797	284 797	304 034
2015	307 727	289 513	289 513	289 513	367 238
2020	317 124	293 650	293 650	298 042	456 816
2025	325 573	296 616	296 616	308 408	566 888
2030	332 619	297 970	297 970	316 111	666 304
2035	338 231	297 711	297 970	318 086	729 948
2040	342 612	296 096	297 970	316 655	784 232
2045	346 173	293 589	297 970	314 961	879 016
2050	349 318	290 643	297 970	315 644	1 065 174
C. Age group 15-64 (thousands)					
1995	174 382	174 382	174 382	174 382	174 382
2000	183 752	180 843	180 843	180 843	180 979
2005	193 541	187 489	187 489	187 489	187 587
2010	201 725	192 357	192 357	192 357	205 815
2015	205 400	192 476	192 476	192 476	246 690
2020	206 151	189 404	189 404	192 476	302 926
2025	204 985	184 267	184 267	192 476	372 525
2030	204 570	179 882	179 882	192 476	437 730
2035	206 741	178 262	178 443	192 476	483 243
2040	209 942	177 872	179 180	192 476	524 402
2045	212 621	177 034	180 081	192 476	590 629
2050	213 695	174 607	179 699	192 476	712 305
D. Potential support ratio 15-64/65 or older					
1995	5.21	5.21	5.21	5.21	5.21
2000	5.28	5.21	5.21	5.21	5.21
2005	5.34	5.21	5.21	5.21	5.21
2010	5.13	4.95	4.95	4.95	5.21
2015	4.54	4.33	4.33	4.33	5.21
2020	3.91	3.67	3.67	3.72	5.21
2025	3.34	3.09	3.09	3.20	5.21
2030	2.98	2.71	2.71	2.87	5.21
2035	2.86	2.58	2.59	2.75	5.21
2040	2.85	2.58	2.60	2.74	5.21
2045	2.86	2.60	2.64	2.77	5.21
2050	2.82	2.57	2.63	2.74	5.21

TABLE A.16 (*continued*)

UNITED STATES OF AMERICA

Scenario	I	II	III	IV	V
Period	Medium variant	Medium variant with zero migration	Constant total population	Constant age group 15-64	Constant ratio 15-64/65 years or older
			E. Age group 65 or older (thousands)		
1995	33 477	33 477	33 477	33 477	33 477
2000	34 833	34 736	34 736	34 736	34 743
2005	36 259	36 005	36 005	36 005	36 012
2010	39 321	38 844	38 844	38 844	39 511
2015	45 246	44 472	44 472	44 472	47 358
2020	52 705	51 549	51 549	51 702	58 153
2025	61 347	59 687	59 687	60 143	71 515
2030	68 673	66 306	66 306	67 099	84 032
2035	72 400	68 991	69 000	70 024	92 769
2040	73 692	68 914	68 982	70 140	100 671
2045	74 293	67 972	68 149	69 513	113 385
2050	75 899	67 961	68 287	70 184	136 743
			F. Percentage in age group 65 or older		
1995	12.5	12.5	12.5	12.5	12.5
2000	12.5	12.7	12.7	12.7	12.7
2005	12.6	12.9	12.9	12.9	12.9
2010	13.2	13.6	13.6	13.6	13.0
2015	14.7	15.4	15.4	15.4	12.9
2020	16.6	17.6	17.6	17.3	12.7
2025	18.8	20.1	20.1	19.5	12.6
2030	20.6	22.3	22.3	21.2	12.6
2035	21.4	23.2	23.2	22.0	12.7
2040	21.5	23.3	23.2	22.2	12.8
2045	21.5	23.2	22.9	22.1	12.9
2050	21.7	23.4	22.9	22.2	12.8
			G. Age group 0-14 (thousands)		
1995	59 161	59 161	59 161	59 161	59 161
2000	59 771	58 756	58 756	58 756	58 808
2005	58 579	56 442	56 442	56 442	56 481
2010	56 943	53 597	53 597	53 597	58 708
2015	57 081	52 564	52 564	52 564	73 190
2020	58 268	52 697	52 697	53 864	95 737
2025	59 241	52 662	52 662	55 789	122 849
2030	59 376	51 782	51 782	56 536	144 543
2035	59 090	50 458	50 527	55 586	153 935
2040	58 978	49 310	49 807	54 038	159 158
2045	59 258	48 583	49 740	52 972	175 002
2050	59 724	48 075	49 984	52 984	216 127
			H. Potential support ratio in 2050 by age at entry into non-working-age population		
Age					
65	2.82	2.57	2.63	2.74	5.21
70	4.09	3.71	3.79	3.97	8.20
75	6.12	5.47	5.59	5.86	13.13
80	9.76	8.59	8.79	9.20	22.01

NOTE: The five scenarios are briefly as follows:

I - Corresponds to the medium variant of the official United Nations population projections (*World Population Prospects 1998 Revision*);
II - This scenario amends the medium variant by assuming no migration after 1995;
III - This scenario keeps the total population figure constant at the highest level that it would reach in absence of migration after 1995.
IV - This scenario keeps the number of persons aged 15-64 constant at the highest level that it would reach in absence of migration after 1995.
V - This scenario keeps the ratio of persons aged 15-64 to persons aged 65 and above at the highest level that it would reach in absence of migration after 1995.

TABLE A.17. EUROPE, *1998 REVISION*

EUROPE

A. ESTIMATES

Indicator	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995
Population (thousands)										
Total	547 318	575 404	604 947	635 066	656 441	676 390	693 260	706 580	722 206	727 912
Males	255 330	270 176	285 567	301 589	312 918	323 102	332 022	338 968	347 683	351 067
Females	291 988	305 228	319 380	333 478	343 523	353 288	361 238	367 612	374 523	376 845
Sex ratio (per 100 females)	87.4	88.5	89.4	90.4	91.1	91.5	91.9	92.2	92.8	93.2
Age distribution:										
Percentage aged 0-4	9.2	9.5	9.5	9.0	8.0	7.6	7.2	7.0	6.7	5.7
Percentage aged 5-14	17.0	16.0	17.2	17.5	17.3	16.1	15.0	14.3	13.8	13.5
Percentage aged 15-24	17.3	16.6	15.2	14.5	15.8	16.4	16.2	15.5	14.4	14.0
Percentage aged 60 or over	12.1	12.4	13.1	14.1	15.5	16.4	16.0	16.9	18.2	19.0
Percentage aged 65 or over	8.2	8.6	8.8	9.4	10.5	11.4	12.4	11.9	12.7	13.9
Percentage of women aged 15-49	51.8	50.9	48.1	46.7	47.7	47.9	47.7	47.9	47.5	48.6
Median age (years)	29.2	29.7	30.4	30.9	31.7	32.1	32.6	33.5	34.7	36.1
Population density (per sq km)	24	25	26	28	29	29	30	31	31	32

Indicator	1950-1955	1955-1960	1960-1965	1965-1970	1970-1975	1975-1980	1980-1985	1985-1990	1990-1995
Population change per year (thousands)	5 617	5 909	6 024	4 275	3 990	3 374	2 664	3 125	1 141
Births per year (thousands)	11 740	11 999	11 767	10 923	10 390	10 125	10 054	9 761	8 317
Deaths per year (thousands)	5 932	5 933	6 027	6 366	6 704	7 159	7 480	7 534	8 223
Population growth rate (percentage)	1.00	1.00	0.97	0.66	0.60	0.49	0.38	0.44	0.16
Crude birth rate (per 1,000 population)	20.9	20.3	19.0	16.9	15.6	14.8	14.4	13.7	11.5
Crude death rate (per 1,000 population)	10.6	10.1	9.7	9.9	10.1	10.5	10.7	10.5	11.3
Total fertility rate (per woman)	2.57	2.59	2.56	2.36	2.14	1.97	1.87	1.83	1.57
Gross reproduction rate (per woman)	1.25	1.26	1.24	1.15	1.04	0.96	0.91	0.89	0.76
Net reproduction rate (per woman)	1.14	1.17	1.18	1.09	1.00	0.93	0.89	0.87	0.75
Infant mortality rate (per 1,000 births)	72	51	37	30	25	22	18	15	12
Life expectancy at birth (years)									
Males	63.5	65.4	66.7	67.0	67.2	67.3	67.9	69.1	68.5
Females	68.6	70.8	72.6	73.6	74.2	75.0	75.7	76.7	76.7
Both sexes combined	66.2	68.3	69.8	70.4	70.8	71.2	71.9	73.0	72.6

B. MEDIUM-VARIANT PROJECTIONS

Indicator	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	727 912	728 887	727 431	724 242	719 307	711 909	702 335	690 976	662 541	627 691
Males	351 067	351 737	351 215	349 905	347 794	344 427	339 908	334 398	320 511	304 019
Females	376 845	377 150	376 217	374 337	371 513	367 482	362 427	356 578	342 029	323 672
Sex ratio (per 100 females)	93.2	93.3	93.4	93.5	93.6	93.7	93.8	93.8	93.7	93.9
Age distribution:										
Percentage aged 0-4	5.7	5.1	5.0	5.0	5.0	4.8	4.7	4.7	4.7	4.7
Percentage aged 5-14	13.5	12.4	10.9	10.2	10.2	10.2	10.0	9.8	9.7	9.7
Percentage aged 15-24	14.0	13.8	13.6	12.6	11.1	10.5	10.5	10.5	10.3	10.3
Percentage aged 60 or over	19.0	20.3	20.7	22.0	23.8	26.0	28.1	29.8	32.6	34.7
Percentage aged 65 or over	13.9	14.7	15.9	16.2	17.4	19.0	21.0	22.9	25.7	27.6
Percentage in school ages 6-11	8.1	7.2	6.3	6.1	6.1	6.1	5.9	5.8	5.8	5.8
Percentage in school ages 12-14	4.1	4.1	3.5	3.1	3.1	3.1	3.1	3.0	3.0	3.0
Percentage in school ages 15-17	4.1	4.1	4.0	3.3	3.1	3.1	3.1	3.1	3.0	3.0
Percentage in school ages 18-23	8.5	8.3	8.3	7.8	6.7	6.3	6.3	6.4	6.2	6.2
Percentage of women aged 15-49	48.6	48.7	48.2	46.4	44.2	42.4	40.9	39.5	36.7	36.5
Median age (years)	36.1	37.8	39.4	40.8	42.1	43.4	44.6	45.8	47.5	47.4
Population density (per sq km)	32	32	32	32	31	31	31	30	29	27

Indicator	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population change per year (thousands)	195	-291	-638	-987	- 1 480	- 1 915	- 2 272	- 2 844	- 3 485
Births per year (thousands)	7 493	7 359	7 336	7 196	6 912	6 657	6 503	6 283	5 963
Deaths per year (thousands)	8 248	8 406	8 509	8 641	8 769	8 877	9 040	9 392	9 712
Net migration per year (thousands)	950	757	535	458	377	305	265	265	265
Population growth rate (percentage)	0.03	- 0.04	- 0.09	- 0.14	- 0.21	- 0.27	- 0.33	- 0.42	- 0.54
Crude birth rate (per 1,000 population)	10.3	10.1	10.1	10.0	9.7	9.4	9.3	9.3	9.2
Crude death rate (per 1,000 population)	11.3	11.5	11.7	12.0	12.3	12.6	13.0	13.9	15.0
Net migration rate (per 1,000 population)	1.3	1.0	0.7	0.6	0.5	0.4	0.4	0.4	0.4
Total fertility rate (per woman)	1.42	1.42	1.47	1.54	1.61	1.67	1.72	1.75	1.77
Gross reproduction rate (per woman)	0.69	0.69	0.72	0.75	0.78	0.81	0.84	0.85	0.86
Net reproduction rate (per woman)	0.68	0.68	0.70	0.74	0.77	0.80	0.83	0.84	0.85
Infant mortality rate (per 1,000 births)	12	11	10	10	9	8	8	7	6
Mortality under age 5 (per 1,000 births)	14	13	12	11	10	9	9	8	7
Life expectancy at birth (years)									
Males	69.2	70.1	71.3	72.4	73.3	74.1	74.9	75.8	76.9
Females	77.4	78.1	78.8	79.5	80.2	80.8	81.4	82.2	83.2
Both sexes combined	73.3	74.1	75.0	75.9	76.7	77.5	78.1	79.0	80.1

Source: United Nations Population Division, *World Population Prospects: The 1998 Revision.*

TABLE A.17 (*continued*)

EUROPE

C. HIGH-VARIANT PROJECTIONS

	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	727 912	731 714	736 918	741 460	744 534	745 848	746 730	747 670	748 169	745 949
Males	351 067	353 185	356 077	358 732	360 728	361 827	362 666	363 459	364 396	364 599
Females	376 845	378 528	380 840	382 728	383 806	384 022	384 064	384 211	383 773	381 350
Age distribution:										
Percentage aged 0-4	5.7	5.5	5.9	5.9	5.9	5.8	5.8	6.0	6.1	6.2
Percentage aged 5-14	13.5	12.3	11.1	11.3	11.8	11.8	11.6	11.6	12.1	12.4
Percentage aged 15-24	14.0	13.7	13.5	12.3	11.1	11.3	11.8	11.8	11.7	12.2
Percentage aged 60 or over	19.0	20.2	20.4	21.5	23.0	24.8	26.4	27.6	28.8	29.2
Percentage aged 65 or over	13.9	14.7	15.7	15.8	16.8	18.2	19.8	21.2	22.7	23.2
Percentage of women aged 15-49	48.6	48.5	47.6	45.4	43.2	41.8	40.8	39.9	38.3	39.6
Median age (years)	36.1	37.6	38.9	39.9	40.9	41.7	42.3	42.9	42.3	41.3

	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population change per year (thousands)	760	1 041	908	615	263	176	188	50	- 222
Population growth rate (percentage)	0.10	0.14	0.12	0.08	0.04	0.02	0.03	0.01	- 0.03
Crude birth rate (per 1,000 population)	11.1	11.9	12.0	11.9	11.6	11.8	12.0	12.3	12.4
Crude death rate (per 1,000 population)	11.3	11.5	11.5	11.7	11.8	11.9	12.1	12.6	13.1
Net migration rate (per 1,000 population)	1.3	1.0	0.7	0.6	0.5	0.4	0.4	0.4	0.4
Total fertility rate (per woman)	1.53	1.68	1.78	1.88	1.99	2.07	2.12	2.16	2.17
Gross reproduction rate (per woman)	0.74	0.82	0.87	0.92	0.97	1.01	1.03	1.05	1.06
Net reproduction rate (per woman)	0.73	0.80	0.85	0.90	0.95	0.99	1.02	1.04	1.05

D. LOW-VARIANT PROJECTIONS

	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	727 912	727 358	722 580	715 438	705 509	691 970	675 010	655 025	606 842	549 852
Males	351 067	350 952	348 725	345 388	340 716	334 198	325 891	315 959	291 949	264 120
Females	376 845	376 406	373 855	370 050	364 794	357 772	349 118	339 067	314 893	285 732
Age distribution:										
Percentage aged 0-4	5.7	4.9	4.6	4.5	4.3	4.1	3.8	3.6	3.4	3.2
Percentage aged 5-14	13.5	12.4	10.7	9.7	9.3	9.2	8.7	8.2	7.6	7.3
Percentage aged 15-24	14.0	13.8	13.7	12.7	11.1	10.1	9.8	9.7	9.0	8.4
Percentage aged 60 or over	19.0	20.3	20.8	22.3	24.3	26.7	29.2	31.5	35.5	39.6
Percentage aged 65 or over	13.9	14.8	16.0	16.4	17.7	19.6	21.9	24.2	28.0	31.5
Percentage of women aged 15-49	48.6	48.8	48.5	47.0	44.8	42.9	41.2	39.6	35.6	33.9
Median age (years)	36.1	37.8	39.6	41.2	42.7	44.3	46.0	47.6	50.8	52.6

	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population change per year (thousands)	-111	-956	- 1 428	- 1 986	- 2 708	- 3 392	- 3 997	- 4 818	- 5 699
Population growth rate (percentage)	- 0.02	- 0.13	- 0.20	- 0.28	- 0.39	- 0.50	- 0.60	- 0.76	- 0.99
Crude birth rate (per 1,000 population)	9.9	9.2	9.1	8.7	8.1	7.6	7.2	6.8	6.4
Crude death rate (per 1,000 population)	11.3	11.6	11.8	12.1	12.5	13.0	13.6	14.8	16.7
Net migration rate (per 1,000 population)	1.3	1.0	0.7	0.6	0.5	0.4	0.4	0.4	0.5
Total fertility rate (per woman)	1.36	1.29	1.31	1.33	1.34	1.34	1.34	1.34	1.35
Gross reproduction rate (per woman)	0.66	0.63	0.64	0.65	0.65	0.65	0.65	0.65	0.66
Net reproduction rate (per woman)	0.65	0.62	0.63	0.64	0.64	0.64	0.64	0.65	0.65

E. CONSTANT-VARIANT PROJECTIONS

	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	727 912	732 647	734 946	734 282	730 261	722 905	713 259	701 568	670 700	631 047

	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population growth rate (percentage)	0.13	0.06	- 0.02	- 0.11	- 0.20	- 0.27	- 0.33	- 0.45	- 0.61
Crude birth rate (per 1,000 population)	11.3	11.1	10.7	10.1	9.5	9.3	9.1	8.8	8.4
Crude death rate (per 1,000 population)	11.3	11.5	11.6	11.8	12.1	12.4	12.8	13.7	14.9

Source: United Nations Population Division, *World Population Prospects: The 1998 Revision*.

TABLE A.18. EUROPE, REPLACEMENT MIGRATION SCENARIOS

EUROPE

Scenario	I	II	III	IV	V
Period	Medium variant	Medium variant with zero migration	Constant total population	Constant age group 15-64	Constant ratio 15-64/65 years or older
			A. Average annual net migration (thousands)		
1995-2000	950	0	854	0	5 844
2000-2005	757	0	1 063	0	12 410
2005-2010	535	0	1 046	293	1 868
2010-2015	458	0	1 150	3 642	17 234
2015-2020	377	0	1 478	4 696	24 901
2020-2025	305	0	1 879	4 847	29 817
2025-2030	265	0	2 199	4 316	30 837
2030-2035	265	0	2 371	3 511	30 110
2035-2040	265	0	2 519	3 489	34 504
2040-2045	265	0	2 665	3 530	38 863
2045-2050	265	0	2 803	3 945	50 841
Grand total 1995-2050	23 530	0	100 137	161 346	1 386 151
			B. Total population (thousands)		
1995	727 912	727 912	727 912	727 912	727 912
2000	728 887	723 482	727 912	723 482	753 810
2005	727 431	717 671	727 912	717 671	814 445
2010	724 242	711 598	727 912	713 122	824 271
2015	719 307	704 660	727 912	725 305	913 174
2020	711 909	695 650	727 912	742 496	1 046 692
2025	702 335	684 055	727 912	759 766	1 212 912
2030	690 976	670 167	727 912	773 668	1 392 793
2035	677 745	654 730	727 912	783 008	1 576 523
2040	662 541	637 917	727 912	791 587	1 789 486
2045	645 648	619 792	727 912	799 739	2 032 569
2050	627 691	600 464	727 912	809 399	2 346 459
			C. Age group 15-64 (thousands)		
1995	487 110	487 110	487 110	487 110	487 110
2000	494 102	492 142	495 287	492 142	513 673
2005	496 449	492 555	499 872	492 555	561 570
2010	496 671	491 475	503 224	492 555	572 861
2015	485 578	477 950	494 817	492 555	628 831
2020	469 838	459 414	482 880	492 555	712 731
2025	451 599	438 874	470 673	492 555	818 857
2030	432 691	418 796	460 324	492 555	935 364
2035	414 960	400 452	452 463	492 555	1 056 366
2040	397 473	381 771	444 939	492 555	1 196 976
2045	380 886	363 446	438 583	492 555	1 358 048
2050	364 277	345 100	432 959	492 555	1 564 343
			D. Potential support ratio 15-64/65 or older		
1995	4.81	4.81	4.81	4.81	4.81
2000	4.60	4.65	4.67	4.65	4.81
2005	4.29	4.35	4.40	4.35	4.81
2010	4.24	4.30	4.38	4.31	4.81
2015	3.89	3.92	4.03	4.02	4.81
2020	3.47	3.46	3.60	3.66	4.81
2025	3.06	3.03	3.20	3.33	4.81
2030	2.73	2.70	2.90	3.08	4.81
2035	2.50	2.47	2.71	2.92	4.81
2040	2.34	2.30	2.56	2.81	4.81
2045	2.21	2.16	2.46	2.72	4.81
2050	2.11	2.04	2.38	2.62	4.81

TABLE A.18 (*continued*)

EUROPE

Period	Scenario I Medium variant	II Medium variant with zero migration	III Constant total population	IV Constant age group 15-64	V Constant ratio 15-64/65 years or older
	E. Age group 65 or older (thousands)				
1995	101 338	101 338	101 338	101 338	101 338
2000	107 439	105 831	105 982	105 831	106 865
2005	115 588	113 249	113 639	113 249	116 829
2010	117 185	114 231	114 912	114 283	119 178
2015	124 910	121 798	122 842	122 522	130 822
2020	135 491	132 589	134 135	134 409	148 276
2025	147 524	144 774	147 081	147 993	170 355
2030	158 482	155 357	158 824	160 149	194 593
2035	165 668	162 033	167 217	168 622	219 766
2040	170 119	166 178	173 647	175 250	249 019
2045	172 046	168 008	178 182	180 882	282 528
2050	172 985	168 986	182 222	187 704	325 446
	F. Percentage in age group 65 or older				
1995	13.9	13.9	13.9	13.9	13.9
2000	14.7	14.6	14.6	14.6	14.2
2005	15.9	15.8	15.6	15.8	14.3
2010	16.2	16.1	15.8	16.0	14.5
2015	17.4	17.3	16.9	16.9	14.3
2020	19.0	19.1	18.4	18.1	14.2
2025	21.0	21.2	20.2	19.5	14.0
2030	22.9	23.2	21.8	20.7	14.0
2035	24.4	24.7	23.0	21.5	13.9
2040	25.7	26.1	23.9	22.1	13.9
2045	26.6	27.1	24.5	22.6	13.9
2050	27.6	28.1	25.0	23.2	13.9
	G. Age group 0-14 (thousands)				
1995	139 464	139 464	139 464	139 464	139 464
2000	127 346	125 509	126 643	125 509	133 272
2005	115 394	111 867	114 402	111 867	136 046
2010	110 386	105 892	109 776	106 284	132 231
2015	108 819	104 911	110 254	110 227	153 521
2020	106 579	103 647	110 897	115 532	185 685
2025	103 212	100 408	110 158	119 218	223 700
2030	99 803	96 015	108 765	120 963	262 836
2035	97 117	92 245	108 233	121 831	300 391
2040	94 948	89 968	109 326	123 782	343 491
2045	92 717	88 338	111 147	126 301	391 993
2050	90 430	86 378	112 731	129 140	456 670
	H. Potential support ratio in 2050, by age of entry into non-working-age population				
Age					
65	2.11	2.04	2.38	2.62	4.81
70	3.13	3.04	3.53	3.93	7.36
75	4.88	4.77	5.53	6.15	11.94
80	8.36	8.18	9.52	10.52	21.44

NOTE: The five scenarios are briefly as follows:

I - Corresponds to the medium variant of the official United Nations population projections (*World Population Prospects, 1998 Revision*);
II - This scenario amends the medium variant by assuming no migration after 1995;
III - This scenario keeps the total population figure constant at the highest level that it would reach in absence of migration after 1995.
IV - This scenario keeps the number of persons aged 15-64 constant at the highest level that it would reach in absence of migration after 1995.
V - This scenario keeps the ratio of persons aged 15-64 to persons aged 65 and above at the highest level that it would reach in absence of migration after 1995.

TABLE A.19. EUROPEAN UNION, *1998 REVISION*

EUROPEAN UNION

A. ESTIMATES

Indicator	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995
Population (thousands)										
Total	296151	305088	315857	330279	340576	349313	355421	358732	365235	371937
Males	142059	146694	152085	159683	165057	169501	172616	174195	177802	181615
Females	154092	158394	163772	170595	175519	179812	182806	184537	187432	190322
Sex ratio (per 100 females)	92.2	92.6	92.9	93.6	94	94.3	94.4	94.4	94.9	95.4
Age distribution:										
Percentage aged 0-4	8.7	8.3	8.5	8.8	8.3	7.3	6.5	6.1	5.9	5.6
Percentage aged 5-14	15.8	15.9	16.1	15.7	16.4	16.5	15.2	13.4	12.3	11.8
Percentage aged 15-24	15.4	15.1	14.6	14.7	14.8	15	15.8	16.3	14.9	13.3
Percentage aged 60 or over	13.9	14.6	15.5	16.5	17.6	18.3	17.9	19	20.1	20.8
Percentage aged 65 or over	9.5	10	10.6	11.2	12.2	13.1	13.9	13.6	14.7	15.5
Percentage of women aged 15-49	50.1	48.7	46.7	45.6	45.8	45.7	46.8	48.1	48.4	48.4
Median age (years)	32	32.3	32.8	32.8	32.9	33.1	33.7	34.8	36.1	37.3
Population density (per sq km)	91	94	97	102	105	108	110	111	113	115

Indicator	1950-1955	1955-1960	1960-1965	1965-1970	1970-1975	1975-1980	1980-1985	1985-1990	1990-1995
Population change per year (thousands)	1787	2154	2884	2060	1747	1222	662	1301	1340
Births per year (thousands)	5390	5587	6037	5900	5166	4620	4423	4330	4165
Deaths per year (thousands)	3289	3340	3474	3636	3706	3742	3717	3704	3835
Population growth rate (percentage)	0.59	0.69	0.89	0.61	0.51	0.35	0.19	0.36	0.36
Crude birth rate (per 1,000 population)	17.9	18	18.7	17.6	15	13.1	12.4	12	11.3
Crude death rate (per 1,000 population)	10.9	10.8	10.8	10.8	10.7	10.6	10.4	10.2	10.4
Total fertility rate (per woman)	2.39	2.52	2.69	2.52	2.14	1.86	1.69	1.58	1.5
Gross reproduction rate (per woman)	1.16	1.22	1.31	1.23	1.04	0.9	0.82	0.77	0.73
Net reproduction rate (per woman)	1.07	1.13	1.23	1.16	1	0.87	0.8	0.75	0.72
Infant mortality rate (per 1,000 births)	48	39	32	26	21	15	11	9	7
Life expectancy at birth (years)									
Males	64.7	66.6	67.6	68.2	68.8	69.9	71.1	72.3	73.3
Females	69.2	71.7	73.2	74.2	75	76.5	77.7	78.9	79.7
Both sexes combined	67	69.2	70.4	71.2	71.9	73.2	74.4	75.7	76.5

B. MEDIUM-VARIANT PROJECTIONS

Indicator	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	371937	375276	376478	375694	373831	371125	367342	362201	348281	331307
Males	181615	183591	184472	184287	183509	182257	180401	177808	170702	162314
Females	190322	191685	192006	191407	190322	188868	186941	184394	177579	168993
Sex ratio (per 100 females)	95.4	95.8	96.1	96.3	96.4	96.5	96.5	96.4	96.1	96
Age distribution:										
Percentage aged 0-4	5.6	5.2	4.9	4.7	4.7	4.8	4.7	4.7	4.6	4.7
Percentage aged 5-14	11.8	11.4	10.8	10.2	9.7	9.6	9.7	9.7	9.6	9.7
Percentage aged 15-24	13.3	12.3	11.9	11.6	11	10.4	10	10	10.3	10.2
Percentage aged 60 or over	20.8	21.9	22.9	24.5	26.1	28.1	30.5	32.8	34.9	35.3
Percentage aged 65 or over	15.5	16.4	17.5	18.3	19.8	21.2	23	25.2	28.4	28.9
Percentage in school ages 6-11	7.1	6.8	6.4	6	5.8	5.7	5.8	5.8	5.7	5.8
Percentage in school ages 12-14	3.6	3.5	3.4	3.2	3	2.9	2.9	3	3	2.9
Percentage in school ages 15-17	3.7	3.6	3.5	3.4	3.1	3	2.9	3	3	3
Percentage in school ages 18-23	8.1	7.4	7.2	7.1	6.7	6.3	6.1	6	6.2	6.2
Percentage of women aged 15-49	48.4	47.5	46.5	45.1	42.7	40.3	38.5	37.5	36.4	36.1
Median age (years)	37.3	38.9	40.7	42.6	44.2	45.5	46.4	47.1	48.1	47.9
Population density (per sq km)	115	116	116	116	115	114	113	112	107	102

Indicator	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population change per year (thousands)	668	240	-157	-373	-541	-757	-1028	-1392	-1697
Births per year (thousands)	3892	3686	3555	3539	3548	3482	3384	3250	3167
Deaths per year (thousands)	3799	3916	4057	4219	4363	4488	4622	4852	5074
Net migration per year (thousands)	574	470	346	308	274	250	210	210	210
Population growth rate (percentage)	0.18	0.06	-0.04	-0.1	-0.15	-0.2	-0.28	-0.39	-0.5
Crude birth rate (per 1,000 population)	10.4	9.8	9.5	9.4	9.5	9.4	9.3	9.1	9.3
Crude death rate (per 1,000 population)	10.2	10.4	10.8	11.3	11.7	12.2	12.7	13.6	14.9
Net migration rate (per 1,000 population)	1.5	1.3	0.9	0.8	0.7	0.7	0.6	0.6	0.6
Total fertility rate (per woman)	1.44	1.45	1.5	1.57	1.64	1.69	1.74	1.78	1.8
Gross reproduction rate (per woman)	0.7	0.71	0.73	0.76	0.8	0.82	0.85	0.86	0.87
Net reproduction rate (per woman)	0.69	0.7	0.72	0.75	0.79	0.82	0.84	0.86	0.87
Infant mortality rate (per 1,000 births)	6	6	6	6	5	5	5	5	5
Mortality under age 5 (per 1,000 births)	7.6	7.1	6.8	6.6	6.3	6	5.9	5.6	5.3
Life expectancy at birth (years)									
Males	74.3	75.1	75.7	76.2	76.8	77.3	77.7	78.4	79.2
Females	80.7	81.3	81.8	82.3	82.7	83.2	83.6	84.2	85
Both sexes combined	77.6	78.2	78.8	79.3	79.7	80.2	80.7	81.3	82

Source: United Nations Population Division, *World Population Prospects: The 1998 Revision.*

TABLE A.19 (*continued*)

EUROPEAN UNION

C. HIGH-VARIANT PROJECTIONS

	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	371937	376210	379928	382168	383515	384340	384866	384837	383622	381264
Males	181615	184071	186244	187613	188483	189044	189399	189429	188840	187941
Females	190322	192139	193684	194555	195032	195296	195467	195408	194782	193323
Age distribution:										
Percentage aged 0-4	5.6	5.4	5.5	5.4	5.4	5.5	5.6	5.7	5.9	6.1
Percentage aged 5-14	11.8	11.4	11	10.9	10.9	10.9	11	11.2	11.6	12.1
Percentage aged 15-24	13.3	12.2	11.8	11.4	11	11	11	11	11.4	11.8
Percentage aged 60 or over	20.8	21.8	22.7	24.1	25.5	27.1	29.1	30.9	31.7	30.6
Percentage aged 65 or over	15.5	16.4	17.3	18	19.3	20.5	21.9	23.7	25.8	25.1
Percentage of women aged 15-49	48.4	47.4	46.1	44.3	41.9	39.8	38.4	37.8	37.5	38.5
Median age (years)	37.3	38.8	40.5	42	43.3	44.2	44.6	44.6	43.9	42.5

	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population change per year (thousands)	855	744	448	269	165	105	-6	-121	-236
Population growth rate (percentage)	0.23	0.2	0.12	0.07	0.04	0.03	0	-0.03	-0.06
Crude birth rate (per 1,000 population)	10.9	11.1	10.9	10.9	11.1	11.3	11.5	11.8	12.2
Crude death rate (per 1,000 population)	10.2	10.4	10.7	11	11.4	11.7	12	12.7	13.3
Net migration rate (per 1,000 population)	1.5	1.2	0.9	0.8	0.7	0.7	0.5	0.5	0.5
Total fertility rate (per woman)	1.51	1.65	1.75	1.86	1.96	2.06	2.12	2.18	2.2
Gross reproduction rate (per woman)	0.73	0.8	0.85	0.9	0.95	1	1.03	1.06	1.07
Net reproduction rate (per woman)	0.72	0.79	0.84	0.89	0.94	0.99	1.02	1.05	1.06

D. LOW-VARIANT PROJECTIONS

	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	371937	374518	374056	371434	367102	361188	353666	344232	320436	292104
Males	181615	183201	183227	182099	180053	177155	173380	168583	156411	142204
Females	190322	191317	190829	189335	187049	184033	180286	175649	164025	149900
Age distribution:										
Percentage aged 0-4	5.6	5	4.5	4.3	4.1	4	3.8	3.6	3.4	3.4
Percentage aged 5-14	11.8	11.5	10.7	9.6	9	8.7	8.5	8.2	7.6	7.3
Percentage aged 15-24	13.3	12.3	12	11.7	11	10	9.4	9.2	9	8.5
Percentage aged 60 or over	20.8	21.9	23	24.8	26.6	28.8	31.7	34.5	37.9	40
Percentage aged 65 or over	15.5	16.4	17.6	18.6	20.1	21.8	23.8	26.5	30.9	32.7
Percentage of women aged 15-49	48.4	47.6	46.8	45.5	43.2	40.7	38.8	37.5	35.4	33.6
Median age (years)	37.3	39	40.9	42.9	44.8	46.4	47.8	49.1	51.3	52.9

	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population change per year (thousands)	516	-92	-524	-866	-1183	-1504	-1887	-2380	-2833
Population growth rate (percentage)	0.14	-0.02	-0.14	-0.23	-0.32	-0.42	-0.54	-0.72	-0.93
Crude birth rate (per 1,000 population)	10	9	8.5	8.2	8	7.6	7.2	6.8	6.6
Crude death rate (per 1,000 population)	10.2	10.5	10.9	11.4	12	12.5	13.2	14.6	16.5
Net migration rate (per 1,000 population)	1.5	1.3	0.9	0.8	0.8	0.7	0.6	0.6	0.7
Total fertility rate (per woman)	1.38	1.32	1.34	1.35	1.35	1.36	1.36	1.37	1.37
Gross reproduction rate (per woman)	0.67	0.64	0.65	0.66	0.66	0.66	0.66	0.66	0.67
Net reproduction rate (per woman)	0.66	0.63	0.64	0.65	0.65	0.65	0.66	0.66	0.66

E. CONSTANT-VARIANT PROJECTIONS

	1995	2000	2005	2010	2015	2020	2025	2030	2040	2050
Population (thousands)										
Total	371937	376119	378012	377362	374839	370817	365477	358609	340395	317555

	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2040	2040-2050
Population growth rate (percentage)	0.22	0.1	-0.03	-0.13	-0.22	-0.29	-0.38	-0.52	-0.69
Crude birth rate (per 1,000 population)	10.9	10.1	9.5	9.1	8.8	8.6	8.4	8.1	7.8
Crude death rate (per 1,000 population)	10.2	10.4	10.7	11.2	11.7	12.2	12.8	13.9	15.4

Source: United Nations Population Division, *World Population Prospects: The 1998 Revision.*

TABLE A.20. EUROPEAN UNION, REPLACEMENT MIGRATION SCENARIOS

EUROPEAN UNION

Scenario	I	II	III	IV	V
Period	Medium variant	Medium variant with zero migration	Constant total population	Constant age group 15-64	Constant ratio 15-64/65 years or older
			A. Average annual net migration (thousands)		
1995-2000	574	0	0	46	5 302
2000-2005	470	0	263	396	6 171
2005-2010	346	0	521	545	5 095
2010-2015	308	0	663	1 596	9 012
2015-2020	274	0	742	1 938	9 557
2020-2025	250	0	869	2 424	12 947
2025-2030	210	0	1 032	2 814	18 312
2030-2035	210	0	1 216	2 407	20 346
2035-2040	210	0	1 351	1 593	18 724
2040-2045	210	0	1 416	1 063	16 483
2045-2050	210	0	1 418	1 097	18 153
Grand total 1995-2050	16 361	0	47 456	79 605	700 506
			B. Total population (thousands)		
1995	371 937	371 937	371 937	371 937	371 937
2000	375 276	372 440	372 440	372 680	400 089
2005	376 478	371 065	372 440	373 390	433 063
2010	375 694	368 232	372 440	373 590	461 257
2015	373 831	364 428	372 440	378 554	510 650
2020	371 125	359 936	372 440	385 344	565 699
2025	367 342	354 500	372 440	394 551	641 056
2030	362 201	347 891	372 440	405 592	748 324
2035	355 783	339 947	372 440	414 173	871 833
2040	348 281	330 878	372 440	418 003	992 383
2045	340 013	321 049	372 440	418 422	1 104 897
2050	331 307	310 839	372 440	418 509	1 228 341
			C. Age group 15-64 (thousands)		
1995	249 382	249 382	249 382	249 382	249 382
2000	251 299	249 213	249 213	249 382	268 773
2005	251 625	247 737	248 709	249 382	291 712
2010	250 909	245 587	248 563	249 382	311 918
2015	245 947	239 387	245 055	249 382	344 093
2020	239 216	231 427	240 285	249 382	379 072
2025	230 090	221 083	233 826	249 382	426 112
2030	218 698	208 594	226 054	249 382	492 818
2035	207 975	196 861	219 920	249 382	570 480
2040	199 716	187 775	217 056	249 382	647 667
2045	193 479	180 834	216 656	249 382	721 736
2050	187 851	174 470	216 929	249 382	803 974
			D. Potential support ratio 15-64/65 or older		
1995	4.31	4.31	4.31	4.31	4.31
2000	4.08	4.06	4.06	4.06	4.31
2005	3.83	3.80	3.81	3.82	4.31
2010	3.64	3.60	3.64	3.65	4.31
2015	3.33	3.28	3.34	3.39	4.31
2020	3.04	2.98	3.07	3.17	4.31
2025	2.73	2.66	2.78	2.94	4.31
2030	2.39	2.32	2.48	2.69	4.31
2035	2.14	2.07	2.26	2.51	4.31
2040	2.02	1.94	2.18	2.43	4.31
2045	1.97	1.90	2.18	2.41	4.31
2050	1.96	1.89	2.21	2.41	4.31

TABLE A.20 (*continued*)

EUROPEAN UNION

Scenario	I	II	III	IV	V
Period	Medium variant	Medium variant with zero migration	Constant total population	Constant age group 15-64	Constant ratio 15-64/65 years or older
			E. Age group 65 or older (thousands)		
1995	57 815	57 815	57 815	57 815	57 815
2000	61 596	61 349	61 349	61 357	62 310
2005	65 725	65 179	65 227	65 263	67 628
2010	68 903	68 186	68 348	68 400	72 312
2015	73 844	72 975	73 311	73 547	79 772
2020	78 599	77 580	78 147	78 683	87 881
2025	84 326	83 096	83 973	84 964	98 786
2030	91 378	89 889	91 199	92 808	114 250
2035	97 012	95 173	97 123	99 413	132 255
2040	99 073	96 772	99 665	102 672	150 149
2045	98 024	95 184	99 381	103 268	167 321
2050	95 600	92 240	98 067	103 280	186 386
			F. Percentage in age group 65 or older		
1995	15.5	15.5	15.5	15.5	15.5
2000	16.4	16.5	16.5	16.5	15.6
2005	17.5	17.6	17.5	17.5	15.6
2010	18.3	18.5	18.4	18.3	15.7
2015	19.8	20.0	19.7	19.4	15.6
2020	21.2	21.6	21.0	20.4	15.5
2025	23.0	23.4	22.5	21.5	15.4
2030	25.2	25.8	24.5	22.9	15.3
2035	27.3	28.0	26.1	24.0	15.2
2040	28.4	29.2	26.8	24.6	15.1
2045	28.8	29.6	26.7	24.7	15.1
2050	28.9	29.7	26.3	24.7	15.2
			G. Age group 0-14 (thousands)		
1995	64 740	64 740	64 740	64 740	64 740
2000	62 380	61 879	61 879	61 941	69 006
2005	59 127	58 149	58 504	58 745	73 723
2010	55 882	54 459	55 529	55 808	77 027
2015	54 040	52 066	54 074	55 625	86 785
2020	53 310	50 929	54 008	57 278	98 747
2025	52 926	50 320	54 641	60 204	116 157
2030	52 125	49 409	55 187	63 402	141 256
2035	50 796	47 913	55 397	65 378	169 098
2040	49 492	46 331	55 719	65 949	194 567
2045	48 510	45 031	56 403	65 772	215 841
2050	47 856	44 130	57 445	65 846	237 981
			H. Potential support ratio in 2050 by age at entry into non-working-age population		
Age					
65	1.96	1.89	2.21	2.41	4.31
70	2.77	2.66	3.12	3.43	6.34
75	4.12	3.94	4.62	5.09	9.87
80	6.81	6.50	7.61	8.37	17.14

NOTE: The five scenarios are briefly as follows:

I - Corresponds to the medium variant of the official United Nations population projections (*World Population Prospects 1998 Revision*);
II - This scenario amends the medium variant by assuming no migration after 1995;
III - This scenario keeps the total population figure constant at the highest level that it would reach in absence of migration after 1995.
IV - This scenario keeps the number of persons aged 15-64 constant at the highest level that it would reach in absence of migration after 1995.
V - This scenario keeps the ratio of persons aged 15-64 to persons aged 65 and above at the highest level that it would reach in absence of migration after 1995.